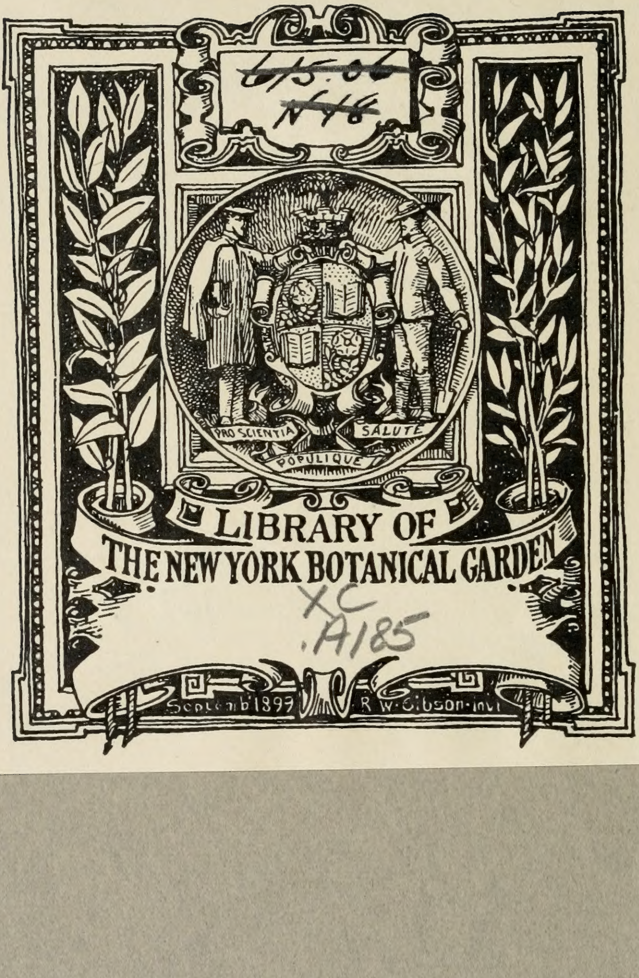


~~615.06~~
~~N48~~

LIBRARY OF
THE NEW YORK BOTANICAL GARDEN

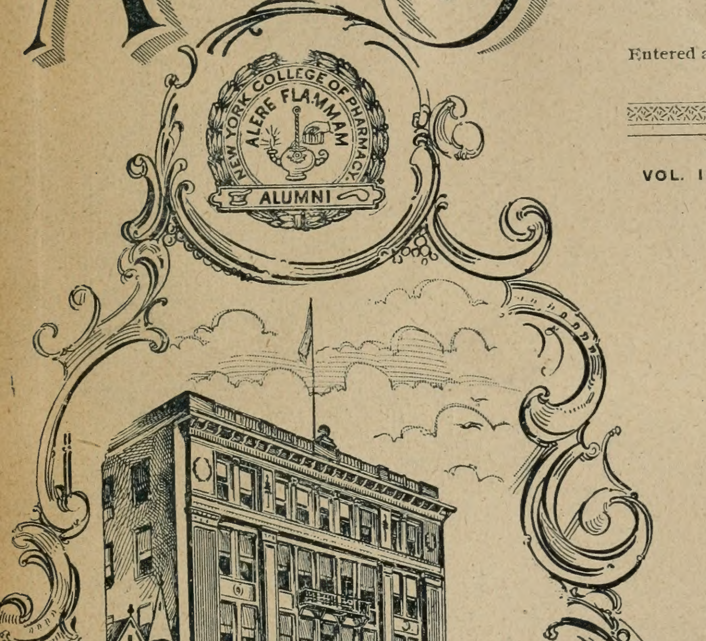
XC
.A185

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. NO. I.

January, 1896.



Contents:

GENERATION, - - - - - - 1
By H. A. Haubold, M. D.
EDITORIAL, - - - - - - - 7
IN MEMORIAM. - - - - - 8
ALUMNI NOTES, - - - - - - 9
CONSTITUTION, CLASS OF '96. - - 12
THE MOST RECENT WORK, - - - 14
NEW REMEDIES, - - - - - - 15
INTELLIGENCE IN PLANTS, - . 16
A PROPOSED NEW PHARMACY LAW, 17
SULPHUR MINES IN LOUISIANA, - 18
A NAUGHT OF SODA, - - - - 1
A SEIDLITZ POWDER SAVED IT - 2

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . . .

XC
.A185
v.3
1896

$600.00 IN PRIZES.

We announce herewith a Series of Prizes to Physicians for the best original article on the "CLINICAL VALUE OF ANTISEPTICS BOTH INTERNAL AND EXTERNAL."

First Prize—An original oil painting entitled "Wedded to Science," valued at $250.00 or its equivalent in cash.

2d Prize------$150.00 in cash.
3d " ------ 75.00 "
4th " ------ 50.00 "
5th " ------ 25.00 "
5 additional prizes of $10.00 in cash.

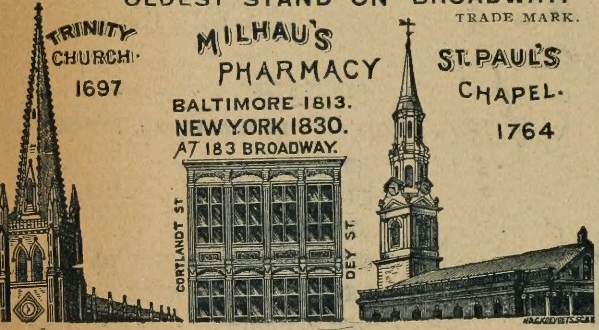
Dr. Frank P. Foster, Editor of the "N. Y. Medical Journal," has kindly consented to assume all responsibility in judging the merits of the various papers submitted. The papers are to be sent sealed to us and will be delivered intact to Dr. Foster.

For particulars and conditions, address,

THE
PALISADE MFG. CO.
YONKERS, N. Y.

The conditions do not require any mention of or reference to BOROLYPTOL. The articles will be judged solely by their intrinsic value to literature and medical science.

OLDEST STAND ON BROADWAY.


TRADE MARK.
TRINITY CHURCH 1697
MILHAU'S PHARMACY
BALTIMORE 1813.
NEW YORK 1830.
AT 183 BROADWAY.
ST. PAUL'S CHAPEL 1764
CORTLANDT ST.
DEY ST.

Over 80 Years' Unbroken Record! 65 years in Same Spot

Nearly midway between the two Colonial Churches.

PRESCRIPTIONS PREPARED SOLELY BY GRADUATES.

MILHAU'S CHALYBEATE CALISAYA

An elixir containing pyrophosphate of iron; does not injure the teeth.

AGENCY FOR

Dr. DECLAT'S PHENIC PREPARATIONS,

AUTHENTIC ANIMAL EXTRACTS
All the Leading Brands.

THE ORIGINAL ELIXIR; 1830.
MILHAU'S CALISAYA
HIGH TEST. TRUE BARK.

A reliable product by an old house. A Wholesome Tonic, Creates Appetite, Induces Assimilation, Recuperates Strength. Tones up the System in Debility and Convalescence.

VIN COCA
MILHAU.

From prime assayed Bolivian Leaf. Revives, Steadies and Sustains the Nerves National Formulary, thrice strength of the Imported Wines. Benign, diuretic; while cocaine wines are toxic, excitant.

Milhau's CALISAYA With Coca

Confers wonderful endurance to stand physical and mental exertion.

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER,
183 Broadway, - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

The Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. **New York, January, 1896.** **No. 1.**

LIBR
NEW
BOTAN
GAR

"GENERATION."

By H. A. HAUBOLD, M. D.,
Assistant to the Chair of Physiology, Bellevue Hospital Medical College, Visiting Surgeon to Harlem Hospital, Fellow to State Medical Association, etc.

The question of spontaneous generation is now definitely settled. Its discussion is of purely historical interest and as the time allotted to me this evening is necessarily short, I shall dismiss this subject with the statement that there is no such thing as spontaneous generation. There are, of course, certain distinct forms of generation that obtain in some of the lower forms of animal life. But we are not concerned with these to-night. The subject of this lecture is Human Generation and here it is necessary that certain physiological conditions must obtain. These conditions I shall now discuss.

In physiology there is no such thing as immaculate conception. The creation of a new being begins with the union of the male and female elements of generation. This in the male is the spermatozoid, and in the female the ovum.

The union of these two elements is brought about by an act that is known as sexual connection or copulation.

The function of generation as regards the male senses with the comparatively simple process of penetration of the male element into the substance of the ovum and its fusion with the same.

This is called fecundation of the ovum. The fecundated ovum then undergoes certain changes that are the first processes of its development, forms its attachments to the body of the mother, continues its development and is nourished and grows until the fœtus at right is brought into the world.

The female organs of generation are divided into internal and external.

The external are the vulva with its adjacent parts of the vagina. The internal are the uterus, fallopian tubes and the ovaries.

The ovaries are the true female organs and in them alone is the female element produced. The fallopian tubes and the uterus are accessory organs, the female element, the ovum, passing through the fallopian tubes into the uterus, where it forms the attachments to the mother that are necessary to its further development. A minute description of these accessory organs belongs to descriptive anatomy and I shall not do more than attempt to give you a more or less clear idea of their form position as we progress.

The ovaries, as you see, are situated to either side of the uterus in close proximity to the fimbriated ends of the fallopian tubes.

Each ovary is about an inch and one-half in length, half an inch in thickness and three-quarters of an inch wide. They weigh about 75 grains each.

In making a section of the ovary it is seen to consist of two kinds of tissue; a cortical substance about $\frac{1}{25}$ of an inch in diameter and a medullary substance containing a large number of blood vessels. The cortical substance alone contains the Graafian follicles.

The medullary substance consists of trubeculue of fibrous tissue, a few muscular fibres and a large number of blood-vessels.

Graafian follicles were first described by De Graaf in 1672. They are contained in the outer or cortical substance of the ovary only, and according to Henle are about 36,000 in number. A Graafian follicle at the age of puberty measures from the smallest $\frac{1}{800}$ inch in diameter to the largest nearly half inch in diameter. In a fully developed follicle an ovum measures about $\frac{1}{125}$ inch in diameter.

In the process that culminates in the discharge of the ovum into the fallopian tube the Graafian follicle gradually enlarges and finally ruptures on the surface of the ovary. A Graafian follicle consists of a proper coat and a lining membrane, both of which are composed of fibrous tissue. Within this is a layer of epithelial cells called the membrana granulosa. These cells form an accumulation at a certain point being pushed over as it were by the liquid that fills the Graafian follicle. This accumulation is called the discus proligerus and contains the ovum in its center.

The Uterus, or as it is commonly called, the womb, is a pear shaped body situated between the bladder in front and the rectum behind. It opens below into the vagina by an opening called the os-uteri. It is usually when not impregnated about three inches long and two inches wide at its widest portion, where the fallopian tubes come off. It is held in place by ligaments that are attached to the pelvic walls and adjacent organs.

The uterus consists of muscular fibres of the non-striated variety and it is the contraction of these fibres that ultimately results in the expulsion of the matured fœtus. It is lined by mucous membrane. This membrane is smooth and firmly attached to the body of the uterus and undergoes remarkable changes during menstruation. Under ordinary conditions its thickness is from $\frac{1}{25}$ to $\frac{1}{14}$ of an inch in diameter, but it measures during menstruration $\frac{1}{6}$ to $\frac{1}{4}$ of an inch.

The Fallopian Tubes lead from the ovaries to the uterus, as shown in the drawing. They open into the uterus by a small opening that gradually increases in diameter, so that they are rather trumpet shaped. Near the ovary they turn backward and downward. The extremity near the ovary is fimbriated. The tubes are lined by mucous membrane which is covered by ciliated epithelium.

The Ovum is, as you remember, is contained in the Graafian follicle surrounded by the discus proligerus.

There have been many descriptions of the anatomy of the ovum offered to science, but that of Nagel is the one generally accepted.

The human ovum is $\frac{1}{125}$ of inch in diameter and consists of an outer clear membrane called the vitelline membrane, this is surrounded by the cells of the discus proligerus. Within the cells of the discus proligerus is a layer of epithelial cells called the corona radiata, and these are in immediate contact with the vitelline membrane or zona radiata. within the vitelline membrane is a clear space to the fact that the vitellus or yolk is smaller than the space it is contained in, this space is called the periveteline space. Continuing our description from without inward, the next substance that presents itself is the vitellus itself, it is limited externally by a translucent area called the outer clear space. Next this and internally, is an accumulation of small granules, the protoplasmic zone, and within this larger granules the dentoplasmic zone.

The germinal vesicle is imbedded in the vitellus and contains the germinal spot.

Mechanism of the Discharge of the Ovum.—A ripe Graafian follicle measures $\frac{2}{5}$ to $\frac{1}{2}$ inch, and presents itself as a rounded elevation surrounded by blood-vessels, on the surface of the ovum.

At its most prominent portion is a small ovoid space that is devoid of blood-vessels, and it is this spot that finally gives way and the ovum is propelled into the fimbriated extremity of the fallopian tube.

The changes that take place in the Graafian follicle subsequent to the discharge of the ovum, result in the formation of the corpus luteum. The changes described above usually take place near the menstrual period, and it is probable that the discharge of an ovum is precipitated by the sexual act. Still, ovulation may take place entirely independently of these two phenomenæ.

Menstruation occurs in human females about every 28 days. The changes that take place in the uterus are simple enough. The mucous membrane lining becomes thickened, thrown into folds and largely distended with capillary blood vessels. These blood vessels rupture and the fluid is discharged by the vagina. Menstruation occupies between 3 and 8 days, and when it has ceased the mucous membrane returns to its normal state.

Male Organs of Generation.— The chief physiological interest attached to the anatomy of these organs relates to the testicles. As regards the penis, it will be necessary to do little more than describe it in a general way.

The Testicles are two ovoid organs contained in the scrotum. The tunica vaginatis is a short sac that lines the scrotum and is reflected over the body of the testicle and the spermatic cord. The spermatic cord is composed of the vas defereus and the blood vessels that nourish the testicle and is the avenue through which the male element of generation passes on its way toward the penis.

Beneath the tunica vaginalis are the testicles with their proper fibrous coat.

These organs are ovoid, flattened and measure 1½ inches in length, about 1¼ inches from before backward, and nearly an inch from side to side. They weigh about three-quarters of an ounc each.

The proper fibrous coat of the testicle is called the tunica albuquila. It is thick and strong, and is simply for protection of the contained structures. Sections of the testicle show that a process of the covering subdivides the testicle into two compartments; the upper is called the Corpus Highmorianum, the lower is subdivided again into a number of lobules, which contain the tubes that create the semen.

These tubes exist to the number of about 840 in each testicle. Each tube represents a tangled mass. When unraveled, it is found that a single tube measures about 30 inches in length. These tubes all unite into about thirty larger ones, called vasa recta. These latter now pass out of the testicle, and form a series of small conical masses, the epididymus, from thence they pass on up through the spermatic cord to the urethra at its prostatic portion.

At the base of the bladder are situated two small sacs, the vesicular seminalis, and it is here that the semen is stored up until it is ejaculated.

The *Spermatozoids* are the essential male elements of generation, and are developed in the testicle. In the healthy male, at the climax of a normal venereal orgasm, 11 to 92 grains of seminal fluid are ejaculated from the urethra. I shall confine myself to a description of only the essential element of generation contained in this fluid. Indeed, the other constituents are of no importance whatever.

Spermatozoids were discovered by Van-Hansen in 1677. They present a flattened, conoidal head and a long, tapering tail. The tail is in active motion, which propels these little bodies into the channels of fecundation in the female.

Microscopical examination does not reveal any very distinct structure in the substance of the spermatozoid. They consist of a head, an intermediary segment, a tail and a terminal filament.

Fecundation Development of the Ovum.—As to how the spermatozoid gains access to the ovum, it is only necessary to state that coitus is possible through erection of the penis and its entrance into the vagina of the female.

There are, of course, modifications in the detail of this act: but I need not discuss them here.

Fecundation usually takes place in the dilated portion of the faliopian tube. It probably never takes place in the uterus. Although it may occur at any time, immediately before or after the menstrual period is the most favorable time for it. An orgasm on the part of the female is not essential to conception, still there can be no doubt that the occurrence of this phenomena is favorable to it.

Union of the Male and Female Elements.—In the ova of certain animals, an opening called the micropyle, has been demonstrated in the vitelline membrane. Its existence is to be inferred only in the human ovum. It is certain that the spermatozoid gains entrance to the vitellus but just how many it is necessary to fecundate a human ovum is not known. All that can be said upon this point is that there probably is a direct union between the two generative elements, soon to be followed by the series of charges involved in the first process of development.

There are many questions connected with hereditary transmission which have no reasonable explanation in science.

The question of the influences that determine the sex of a child, the visitation upon an offspring of deformities and peculiarities such as spoken of in Oliver Wendel Holmes' Elsie Venner, etc., etc., would lead simply to a recital of remarkable facts with no explanation for them.

A peculiar, and it seems to be an inexplicable fact is that previous pregencies have an influence upon offsprings. This is a fact well known among cattle and dog breeders.

What the mechanism of the influence of the first conception is, it is impossible to say, but the fact is incontestable.

The same influence is observed in the human subject. A woman may have, by a second husband, children who resemble a former husband. Indeed a white woman who has had children by a negro may subsequently bear children to a white man, these children presenting some of the unmistakable peculiarities of the negro race. A fact that stands out as a glaring example of the most terrible and inexplorable of all laws discovered by scientists, that of atavism. After the penetration of spermatozoids and their union with the vitellus, the appearance of the vitellus undergoes a change. This change consists in an enlargement of the granules and their more complete separation from the clear substance of the vitellus.

Polar Globule.—The next process observed in the ovum is the separation from the vitellus of a clear, rounded mass, called the polar globule. And now the germinal vesicle disappears.

The formation of the polar globule takes place by the projection of a portion of the vitellus, which slowly detaches itself from the yolks. A few hours later the polar globule again merges into the substance of the vitellus, and the latter organ takes on its original form.

Segmentation of the Vitellus.—Almost immediately following the phenomena just described the vitellus undergoes the process of segmentation, by which it is divided into a number of small cells, called the blastodermic cells.

As segmentation has been studied in the inferior animals, there appears at the site of the polar globule a furrow, and another immediately opposite; both deepen until the vitellus is divided into two globules. These globules then divide into four, then eight, and continue to subdivide until the vitellus is divided into a large number of cells.

When the cells of the blastoderm are completely formed they are pushed against the vitelline membrane by the formation of a certain amount of liquid. It is probably in this condition that the ovum passes from the fallopian tube into the uterus at about the eighth day after fecundation.

Primitive trace.—The cells formed by the segmentation of the vitellus form a layer in the form of a membrane called the blasto-dermic membrane. This membrane ultimately subdivides, as I shall describe in a few moments.

Soon after the formation of the single blastodemic membrane a layer of smaller cells, accumulate at one place, surrounded by a dark area, this is called the embryum spot. The portion in the centre of the new cells is called the primitive trace. There are are only temporary structures and soon disappear.

Now a permanent double fold appears with a groove between, and this ultimately closes over and forms the first evidence of the spinal canal. At the same time the single blastodemic membrane separates into layers and in profile section we have the following arrangement:

There are three membranes, the epiblast externally, the meso-blast which has two layers and the hypoblast internally from the epiblast and external layer of meso-blast we have developed the bones, muscles, skin and nervous system.

From the hypoblast and internal layer of the mesoblast are developed the digestive tract, the heart, bloodvessels and internal organs generally.

In the mamalia a more extensive and complicated process takes place, for here the new being is developed in the body of the mother and consequently it is necessary that certain connections between them must take place. This is obtained by the formation of the foetal membranes.

As we have seen the external covering during the first stages of development of the ovum is the vitelline membrane, but this soon disappears and when the fecundated ovum is received into the uterus it consists only of the blastodermic cells subdivided into the layers described before.

The blastodermic cells are, as you

know, divided into three distinct layers, the epiblast or outside membrane, the meso-blast which is again subdivided into the epiblastri-meso-blast because it adjoins the epiblast and the hypoblastic, meso-blast because it adjoins the hypoblast, which is the most internal of the three layers of cells.

If we now begin the description of the foetal membranes with this division in mind we see that first of all there is a thickening of the three membranes at a certain point within the vitelline membrane.

From this thickened portion and from the epiblast and its adjoining layer of meso-blast, a double fold appears and surrounds the fœtus until it unites behind and there joins together. The external layer encroaches on the vitelline membrane, and the latter now disappears. This double membrane is called the *annion*. This annion is non-vascular (has no blood-vessels). Soon after the development of the annion the allantois is formed. This membrane is vascular. It encroaches upon the annion and takes the place of its external layer. This I illustrate to you in the drawing.

The structure of the ovum is now as follows:

The chorim which is the name given the altantois, as it is the external membrane and formed from the hypo-blast and the hypo-blastic meso-blast. The annion which is the internal layer of the aniniotis fold that remains during fœtal life and the embryon itself.

Now, there are two membranes that are furnished from the mother.

When the ovum drops into the uterus, it is received between two little double folds of the mucous membrane.

As development goes on, these folds increase in size and completely surround the embryon. They are called respectively the decidua vera and decidua reflexa. At the front where the blood-vessels enter is the decidua serotina. During the life of the new being in the mother elements for its nutriton are derived from the mother and find their way into the body of the fœtus through its membranous attachments.

The Localization of Alkaloids.—Souvan has published a preliminary account of some work on the localization of the alkaloids strychnine and brucine in the seeds of various species of strychnos. The reactions for both alkaloids were obtained in the cells of the endosperm and embryo, but not at all in the membranes. With nitro-sulphuric acid, red-orange and violet colors are obtained in different portions of the tissue. It appears, therefore, that the alkaloids occur closely associated in these tissues. Further results may be expected.—*Journal de Pharmacie.*

Formyl Piperidine.—It is well known that chloral, under the influence of alkalies, decomposes into chloroform and formic acid. A similar reaction takes place, according to Loth, when piperidine is used in the place of the alkali. When equimolecular quantities of the two bodies are allowed to react at the temperature of the water bath, formyl-piperidine and chloroform are obtained. The alkaline character of the pepper alkaloid is here shown in a very marked way:

$CCl_3COH+C_5H_{10}NH=C_5H_{10}N.COH+CHCl_3$.

Formyl-piperidine is an oily liquid of agreeable odor, boiling at 220° C., soluble in water and alcohol. A solution of ether, when treated with dry hydrochloric acid gas, gives crystalline needles of the composition $C_5H_{10}N.COH\ HCl$, whose plantinum salt melts at 171°. The therapeutic action of this interesting alkaloid derivative is now being studied,—*Pharm. Zeit.*

Saccharin Controversies.—A bitter quarrel is going on between the firms of Fahlberg, List & Co. and Dr. F. von Heyden Nachfolger, and literature of a very polemical character is being freely circulated. Fahlberg, List & Co. deny that the saccharin sold under the registered name of "Crystallose" by the rival firm is 100 per cent. saccharin, melting at 224°. The best they send out, say Fahlberg & Co., is not over 94.5 per cent., meting at 210°-217°, and is merely crystalline soda saccharin, which was long ago introduced by themselves. Whereas their own pure saccharin, they urge, contains over 97 per cent. of the pure sweetening body. There appears to be little hesitation in giving the lie direct, and such a quarrel is much to be regretted between rival manufacturers.—*The British and Colonial Druggist.*

THE Alumni Journal

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. JANUARY, 1896. No. 1.

THE ALUMNI JOURNAL will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum,	**One Dollar**
Single Copies,	**15 Cents.**

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
FRED. HOHENTHAL, 857 Third Avenue.

All communications relating to finances and business matter in general should be addressed to
THOS. E. DAVIES, 543 Third Avenue.

All communications relating to subscriptions should be addressed to
NELSON S. KIRK, 9 East 59th Street.

ASSISTANT EDITORS,
*FRED. HOHENTHAL, PH. G.
K. C. MAHEGIN, PH. G.

ASSOCIATE EDITORS,
CHARLES RICE, PH. D,
CHARLES F. CHANDLER, PH. D., M. D., L.L.D., etc.
ARTHUR H. ELLIOTT, PH. D., F. C. S.
HENRY H. RUSBY, M. D.
VIRGIL COBLENTZ, A. M., PH. G., PH. D.

ANOTHER year of prosperity has gone by, and once more the managers of THE ALUMNI JOURNAL bid its readers, "Greeting for the New Year." When we look back upon the work done by THE JOURNAL during the past year, we find that not only has it done the work for which it was originally intended, but that it has also kept track of the more important events which have happened outside of the college, and which would be likely to interest and benefit our readers. The large increase in the subscription list, shows that THE JOURNAL has and is supplying a long felt want, for through the "Class Reports" columns our graduates are able to communicate with each other, and find out what their classmates are doing; we regret that more of the older graduates do not take advantage of these columns to communicate with each other.

Commencing with the new year, the Alumni Association will offer some new attractions to induce the members to meet each other in the Alumni Room, and also to induce those graduates who are not members to join us.

Beginning with January 8, 1896, the Alumni Association will open its doors every Wednesday evening, to the members and to all students of the College; once a month a sociable is to be held, to which the friends and also lady friends of the members, will be cordially invited and made to feel at home.

An announcement, which will undoubtedly please many of the members is, that a piano has been provided for their entertainment; this should bring about a larger attendance of the music loving Esculapii to the social gatherings. The piano will be a very useful instrument on social nights, when our embryo pianists may delight the ladies to their hearts' content.

One thing which must not be forgotten by any one is, that the "First Annual Ball of the Alumni Association," will be held in the Banquet Hall of Madison Square Garden, on the 22d day of January, 1896. Every member and every student should make it a point to be there, if possible, and bring your friends, for on the success of this, the first ball of the Association, may depend the success of any future balls. As to the success of the ball there can be no doubt, for the prime movers of the affair are men who have always given the welfare of the Association their first thought; therefore

Come one, come all!
To the Alumni ball.
And let us all be merry.
Let the strife of life
Be out of sight
On that night of January.

THE large audience which listened to the lecture delivered by Dr. H. A. Haubold, on "Generation," on the night of Wednesday, December 11th, was not merely drawn by the subject of the lecture itself, but was largely due to the genial doctor's popularity, since he was introduced to us last year by his lecture on "Digestion and its Pharmaceutical Aids." Although the subject of his last lecture does not directly concern our pharmaceutical friends, still it could be plainly seen by the attention shown to the learned doctor's discourse that they take an interest in all that concerns either the medical or the pharmaceutical professions.

---

*Due credit must be given to Mr. R. Boenke, '95, for his valuable assistance in the present issue.

AT the next Alumni meeting, to be held on January 15, 1896, Dr. Smith Ely Jelliffe will deliver a lecture on "Our Common Poisonous and Edible Mushrooms." This is a lecture which everybody should attend, as it offers a field of wide research, especially to those engaged in country practice. It is a well known fact that every year a number of persons die from the effects of poisonous mushrooms, having gathered and eaten them by mistake for the edible ones. It will be well worth your time to attend the lecture, for it will be illustrated with colored lantern slides, to impress more fully upon the minds of the audience the physical properties of the plants. Taken all together, the doctor's pleasing personality, combined with an interesting subject, will make it a very entertaining lecture.

IN MEMORIAM.

J. NIVEN HEGEMAN,
Secretary of the College of Pharmacy of the City of New York.
Died November 11, 1895.

The class of '96 desire to express in fitting terms their sense of the loss they have sustained in the death of Mr. Hegeman, the wise counsellor, the true friend, the gentle mentor, the able secretary.

Though but recently entering the paths of pharmacy, which he walked so long and so honorably, we realize the loss which has come to our Alma Mater, to pharmacy, to the community, and to his family and friends.

We desire to emulate his virtues, we deplore his death, we mourn his loss.

To our college we pledge our most earnest and loyal support that the standard of pharmacy which he upheld be ever borne aloft in integrity.

To the family of Mr Hegeman we tender our deepest sympathy and in token thereof we will forward to them a copy of our memorial.

J. Y. CANTWELL,
H. H. HAGEN,
JAS. A. HERLILY,
Committee.

Adopted at the special meeting of the Senior Class, held at the college, November 18, 1895.

MERTON J. COATS, Pres.
J. E. BUTTERWORTH, Sec.

Eugenol Derivatives.—According to Gassman and Krafft, eugenol, the important constituent of oil of cloves, when treated with monochloracetic acid yields eugenol-acetic acid. 65 grs. of eugenol are heated in a sand bath for 20 hours with 130 grs. of 30 per cent. soda solution and 37.5 grs. of monochloracetic acid. The sodium salt thus formed is decomposed by hydrochloric acid, and the free eugenol-acetic acid separates in crystals. These are volatile with steam and form needles, melting at 75°, easily soluble in the usually organic solvents, but not easily in water. By treatment with large excess of soda in amyl alcohol it is converted into the isomeric form, isoeugenol-acetic acid. This, in its turn, is oxidized by potassium permanganate, and yields aldehyde and vanillin-acetic acid identical with the acid formerly described under this name. It forms white crystals, melting at 188°–190°, soluble in warm water and alcohol. It forms stable salts. By the action of phosphorous pentachloride, it is decomposed with the formation of vanillin. The connection between the three acids and vanillin is shown as follows:

Eugenol acetic acid,
$C_6H_3(CH._2CH:CH_2)(OCH_3)(OCH_2COOH)$.
Iso-eugenol acetic acid,
$C_6H_3(CH;CH.CH_3)(OCH_3)(OCH_2COOH)$.
Vanillin acetic acid,
$C_6H_3(COH)(OCH_3)(OCH_2COOH)$.
Vanillin,
$C_6H_3(COH)(OCH_3)(OH)$.

—*Berichte.*

An Isocinchonine Derivative.—Viol has prepared the hydrobromate of isobutyl-cinchonine by the following method: 14 gr. of cinchonine, 8 gr. of isobutyl bromide and 42 gr. of isobutyl alcohol are heated for 36 hours in a reflux condenser. The crystalline salt contains one molecule of water, which is driven off at 100°. The water free hydrobromate melts at 176°, is soluble in water and alcohol, insoluble in ether and chloroform. It is dextro rotary $(a)d = +125°$ in aqueous solution.—*Jour. Pharm. u. Chem.*

Acetamido-Antipyrin.—If antipyrin be treated with nitric acid, it is converted into nitro-antipyrin, which, under the reducing action of zinc and acetic acid becomes amido-antipyrin. The latter body, when warmed with sodium acetate and acetic anhydride, yields acetamido-antipyrin in the form of small crystals, melting at 109° C., soluble in water and in alcohol. The antipyretic action of this body is very marked.—*Pharm. Central.*

Alumni Notes.

THE social features of the Alumni sociable previously announced in this JOURNAL, will commence on Wednesday evening, January 8th, when a forerunner, in the shape of a sociable, will be held, the object being to bring together the students, alumnists and graduates, so that a more fraternal feeling will be manifested, thereby adding to the social success of the Ball. The '96 Glee Club, a very strong organization, will enliven the occasion with popular selections. Geo. Burger will also favor us from his reportoire, which is a very strong one. As Mr. Henning says, "We want everybody as soon as he or she crosses our threshold, to consider themselves members upon that occasion and act accordingly." Come over any time after 7.30 P. M. and bring your friends especially the ladies, who will surely fall in love with our new piano.

MARRIAGES.

MISS SERAPHINE MONAGHAN, '89, who will be remembered as one of the class favorites, was married on October 16th, last, to Mr. Thos. A. Mayer, son of the president of the city trolley line. The wedding was largely attended by relatives and friends who were very profuse in their congratulations to the happy couple. After a short trip they returned to Fordham where they are now living.

MISS SADIE E. MCKANE, '92, joined the happy bonds of wedlock a short time ago and is now in this city.

BREVITIES.

REPORTS are that ex-President Graeser is making fine progress in his second years' course at the College of Physicians and Surgeons.

IRA BELFRY, whose business trip to Canada was mentioned in the last issue, has resumed his position with Vincent, of Brooklyn. Previous to this engagement he had been with Messrs. Tsheppe & Schur and Hegeman, of this city.

'93 NOTES.

AS chairman of the committee on arrangements I have received up to date, December 20, 1895, a few favorable and substantial replies from numerous wholesale and manufacturing firms.

The ball is bound to be a success. I never saw such enthusiasm. Every one of the class who is approached answers promptly and quite a number have asked for more tickets to be disposed of among their friends.

WILL MUNSON is married. Good luck and the best of wishes from the class, Will!

VALEDICTORIAN WEBB wears a plug hat and had his whiskers trimmed lately. May they grow and multiply as the sands on Coney Island's beach and never know Webb's improved hair tonic.

AT the lecture delivered by Dr. Haubold, our roll consisted of B. Schreiner, J. Powers, of Plainfield, N. J., H. Heller, E. F. Lohr, W. A. Hoburg and J Tannenbaum.

The subject "Generation" seemed to interest every one present.

THE long wished for piano has arrived at last and music and song was indulged in at the meeting on Wednesday, December 11, 1895.

Mrs. Tannenbaum rendered selections from "Cavalleria Rusticana," "Norwegian Bridal," "Procession" and "Czarina," while Mr. Hoburg and the irresistible G. Burger, '94, tried to sing "In old Madrid" in a duet.

H. SAWE is with Erb, 65th st. and Amsterdam ave.

J. HORTON UHLE succeeds the firm of Dohl & Uhle at 144th st. and Amsterdam ave.

Mr. Uhle is the basso profundo of the class quartet (God forgive the misnomer).

FARMER SCHENCK is with Grinnel at Asbury Park and Schencky kicks the other foot.

L. JACOBSON is with Bohmfalk, 42d st. and 3d ave.

DON'T forget the ball is to be held Wednesday, January 22, 1896, at the Madison Square Garden Banquet Hall at 10 P. M.

If you have not received any tickets by mail why, come and get them at the garden on the night of the ball.

H. Heller is on the reception committee and Chas. T. Cubit is chairman of the floor committee.

Of course, Mr. Cubit, you can have the floor that night, but leave it there because it belongs to the garden.

J. TANNENBAUM, PH. G.,
116 E. 116th st., City.

'94 NOTES.

HAPPY new year!

ANOTHER year with all its glory is past. When we glance back it seems but a short time since '95 was introduced to us. A brief consideration, and we realize what has occurred in the elapsed time, not only in the alumni, but in 94's ranks as well. Many of our members have taken unto themselves "better halves." others are contended with serving time in boarding houses, while the remainder live home amid the pleasures of bachelor life. Taking it altogether we have done very well since that eventful night in Carnegie, when the coveted sheepskins became ours. Yet we are not satisfied, we want a little more fellowship, exactly what the Alumni places at our disposal, when President Stover says the alumni room will be open every Wednesday evening during the winter. The subject of Prof. Haubold's lecture proved to be a very interesting one, from a standpoint of which it is hardly necessary to discuss. The vote of thanks extended was well deserved for the gentleman is a true friend of the boys, who will hereafter know where to go to get pointers. Our roll of honor was graced by Dr. Krueder, Messrs. Pond. Ed. Grube, Berger, Muller, Herold Sturger and Joe Kussy.

GEO. HALL, formerly with Lawrence & Co., on Broadway, and laterly manager of a store up the State, is now with Warner, 7th Avenue and 38th Street.

FROM a canvass taken by myself, I can assure you that it is not a case of who's going to the ball, but who isn't going. Of the latter division, fortunately, there are very few, and I hope these few will reconsider, for it is an opportunity of us having a '94 reunion, something which several influential members have for sometime been agitating, but with little success. "Smoke up, boys," and let '94 lead the classes in attendance.

FRANK NELSON POND, who gained considerable prominence in his political campaign with ex-Secretary Linnig, and who for a long time was with Hanson on Sixth Ave.. is now with Albert Schurr, on Belleville Ave., Newark.

ROBERT F. MURISON has succeeded F. S. Munson, as proprietor of a store on Willoughby ave. and Fleet streets, Brooklyn. Murison is quite a hustler, and will, doubtless, make a success of his new venture.

A SURPRISE of the evening of November 11th, was the presence of Bernard Muller at a lecture. He has been with Geo. E. Herether & Co., 169th Street and 3d Avenue, about a year, and the prospects are that he will remain there for some time to come. Bernard is going to join the Alumni soon, after which we will see him quite often.

I HAD occasion to be present at one of ex-Secretary Linnig's sociables, a short time ago. He is, indeed, a fortunate fellow to be surrounded by such pleasant associates. His dialect remains unchanged, and is amusing as ever when he wants to be. He recommended to me a certain brand of cigars, in fact presented me with a sample of same; well it might have gone in Brooklyn, but not in New York. It reminded me very much of Bill Nye's International, so-called, because when smoked in this country, it could be smelled in Europe.

GEO. BURGER has a new song, very good it is, too, the first part being very simple; while the second part is, well, simply awful. George is as bright as ever. While coming over to Prof. Haubold's lecture, he met a lady on the bridge train, who asked him if the cars stopped at the other end. To which Geo. quickly answered; "If they don't, you'll get a rattling good bump."

JOSEPH REMINGTON WOOD was quietly married (at least to his old College associates), on December 5, 1895, to Miss Elizabeth R. Nicholson, at the bride's home, in Haverford, Pa.

INQUIRER.—Yes; Paul B. Hudson is still with Fear & Co., the druggists' specialists of this city.

SADIE.—I understand Henry Struck is located somewhere on Fourth Ave., Brooklyn.

THOS. E. DAVIES wants a couple of N. Y. C. P. men to help him in discharging his duties as hospital steward of the Eighth Batallion, as the batallion will soon be a regiment, and honors will be even. It will be a good chance for some enterprising collegians.

NELSON S. KIRK, Ph. G.,
9 E. 59th St.

'95 NOTES.

WHEN this issue reaches you, the effects of Christmas and New Year's will have disappeared, and we will be in 1896.

Even though only eight months have elapsed since our departure from college to enter upon our career, what a change could be noticed if all the boys were once again to assemble!

As our friend, David M. Wells, said, on the night of our commencement, we entered college as boys and leave it as men.

If, perhaps, he were mistaken in calling all of us men then, his remark would now be fully justified.

East, West, North and South, to every part of the Union have they scattered; some to meet a bright future, others to find disappointment awaiting them; but all have been contented with their lot, and now, with the New Year, will work on with renewed energy.

BREVITIES.

BETTER late than never, and, therefore, a Happy New Year to you all.

I DEEPLY regret that illness caused my absence at Dr. Herrmann A. Haubold's lecture on "Generation," on December 11th last, and for that reason I am unable to report on that subject; but from what I heard, I understand that the meeting was very well attended, and of a highly interesting nature.

"A VOICE from the hills"—Jesse I. Bailey. See last month's JOURNAL.

OTTO HENSEL has again accepted position with Eimer & Amend, Eighteenth street and Third avenue.

WILLIAM BROESLER is with Bernstein, at Canal and Essex streets.

ALBERT KOEHLER can be found "twisting pills" at C. E. Vetter's Pharmacy, One Hundred and Sixteenth street and Madison avenue.

HENRY G. STEINHEUER is with H. A. Cassebeer; Ernst Meyer is with Ebert, Seventy-ninth street and Second avenue.

You are not only helping along the Alumni, but also renewing old friendship, and the affair promises to be a grand success, as Rudolph Giess has told me, and he ought to know, he being on the committee. Try and be there; lots of the boys are going.

A NEW metal, glucinium, which seems to be destined to become of great importance in the very near future, has been discovered. It will not be of very much use in pharmacy; but on account of its peculiar qualities, it will be used especially for electrical purposes. As its atomic weight is 9.1 and its specific gravity 2.00, its attractive power is considerably greater than that of iron, and its conductability is equal to that of silver. Glucinium, therefore, is more capable of resistance than iron, and a better conductor than copper, and, in addition to all that, it is lighter than aluminium. If these claims for this new metal should be confirmed by practical use, there is no doubt that glucinium will be used extensively for electrical purposes, the more so as its commercial value will amount to about $20 a pound, or 160 times less than the same volume, and 10 times less than the same weight of platinum.

THE '95 OBSERVER,

NOTICE! All matter relating to the Class of '95 should be sent to

RUD. BOENKE, Ph. G.,
437 E. 87th street.

AT a special meeting held on Dec. 9th, Alfred H. Mason was unanimously elected to succeed the late J. Niven Hegeman as secretary of the college. Mr. Mason's wide field of experience makes him an excellent man for the position. But a short time ago he was elected chairman of the Society of Chemical Industries, New York Branch, and has done much towards furthering their interests.

A MEETING for a discussion of the State Poison Law will shortly be held.

I HAVE heard that "Church Tower"—oh! beg pardon, I meant to say Belfry, has returned from Canada and is with Vincent, of Brooklyn; let's hear from you, Belfry.

KIRCHEIN is with H. C. Schmidt, cor. of 91st st. and Park ave.

ROSENTHAL is in partnership with his brother-in-law at the corner of 6th st. and 2d ave. and also at 10th st. and 2d ave.; he reports a flourishing business.

I HAVE not heard anything of Brown yet, but I guess since Commencement Day his capillary appendages have had plenty of time to grow once more upon his smiling countenance.

WHILE I was down to Parke, Davis & Co. the other day, I saw Fergie who looked as though he was working hard; he must have been trying to distinguish Northwestern Senega from the true Polygala Senega.

THE last time that I saw Gieschen was during the summer, when he was working in his old position up on the Boulevard, where he has plenty of chances to see the Bloomer Girl passing on the bike.

MANVILLE was in the store a short time ago; he is traveling for Boehringer & Sons.

TRAU was last seen at a masquerade ball in the costume of an Indian which fitted him to a T.

BOYS, don't forget the first annual ball of the Alumni Association on Jan. 22, 1896, as we want to be well represented therefrom. A new feature in the Alumni rooms is the piano; it will be very useful in making the evenings pass pleasantly when the Alumni starts its open house every Wednesday evening, commencing with Jan. 8, and a sociable once a month, Jan. 8 being the first one.

New Brunswick.—No; I have not seen Gifford since Commencement Day, when he was still wearing his button, "Girl Wanted."

Boys of '95.—Send all your news to our genial R. Boenke, 857 Third avenue, who is now your class reporter.

CLASS OF '96.

"The class of '96 has adopted the old class pin of '91, '92, '93, '94. It is a serviceable pin of good design. One of the causes moving to adopt it was the wish to have it permanently adopted as the distinctive badge of the college. It will be a matter of no small amount of gratification to be able to identify all graduates of the college by their class pins, which cannot be done if each class selects a new and different one.

The illustrated lectures on botany that Prof. Rusby will give after the holidays, is a new departure in teaching the subject that has been advanced by the Professor. The great worth of the system is apparent, and is another example of Prof. Rusby's zeal and devotion in the interest of the students of N. Y. C. P.

It is a matter of regret that a charge of misconduct on the part of the class visiting Squibb's laboratory, should be sent. The privilege extended by Drs. E. R. Squibb and Sons, is a rare one and should be appreciated. At the same time we are inclined to believe that the affair has been exaggerated, if, indeed, a cause for the report exists at all.

Jonathan Morris,
Rep. Sect. I.

'78 NOTES.

Frederick W. Turner has a very extensive practice as a veterinary-surgeon, in Harlem.

J. W.—No; bromide is not furnished free to those who get nervous from the melodious (?) effusions of our amateurs on the new piano. Bring it along yourself. Bring a whole lot, we may all need a dose.

The School of Pharmacy of North-western University has 225 matriculates this fall, which is an increase of 39 above the attendance of last autumn. Of this 225, about thirty have had no previous drug store experience. Twelve are women; 158 are Juniors, 56 Seniors, and 11 are engaged upon their second years' work for the degree of Pharmaceutical Chemist.

CONSTITUTION, CLASS OF '96.

COLLEGE OF PHARMACY, CITY OF NEW YORK.

ARTICLE I.

NAME AND MOTTO.

Section 1. This class shall be called the "Class of '96 of the College of Pharmacy of the City of New York.

Sec. 2. The motto of the class shall be?

ARTICLE II.

ELECTIONS.

Section 1. All the officers of the class shall be elected by ballot on the first regular meeting of the class of each year, and shall enter upon the duties of their offices at the next regular meeting. A majority of the legal votes cast shall be necessary for a choice.

Sec. 2. No election shall be legal unless a quorum be present, and no proxy vote shall be permissible.

ARTICLE III.

OFFICERS.

Section 1. The officers of this class shall consist of a President, First Vice-President, Second Vice-President, Recording Secretary, and a Treasurer, and the officers so elected by the class shall be chosen exclusively from the active members of the different sections of the class of '96.

Sec. 2. It shall be the duty of the President to preside at all meetings of the class.

Sec. 3. In the absence of the President the First Vice-President shall perform the duties incumbent upon that office. In the absence of both President and First Vice-President, the Second Vice-President shall take the chair. In case of a vacancy in the presidency the Vice-President shall become President of the class.

Sec. 4. The duties of the Recording Secretary shall be to read the minutes, record the proceedings of each meeting and take charge of all official documents belonging to the class.

Sec. 5. The Treasurer shall collect all moneys due the class, disburse the same, with the authority of the President, and keep a strict account of the financial affairs, a written report of which shall be presented at each regular meeting.

Sec. 6. Every officer at retirement shall present a written report of all his official transactions.

ARTICLE IV.

MEMBERSHIP.

Section 1. This class shall be composed of active and honorary members.

Sec. 2. Active members shall consist exclusively of Seniors of the class of '96.

Sec. 3. Honorary members shall consist of the Faculty of the College of Pharmacy of the City of New York *ex officio*. They shall be entitled to all the privileges of the active members.

ARTICLE V.

MEETING.

Section 1. There shall be a regular meeting of the class every second Wednesday unless a majority of the members otherwise decree.

Sec. 2. Special meetings of this class shall be called by the President.

Sec. 3. One quarter of the voting members of this class shall constitute a quorum at special meetings, but at regular meetings a majority shall rule.

ARTICLE VI.

IMPEACHMENTS.

Section 1. Any member may be removed from office at any regular meeting by a two-thirds vote of the members present, provided he shall have been impeached in a manner specified in the By-laws, and provided a majority of the members be present.

ARTICLE VII.

COMMITTEES.

Section 1. All the committees to be appointed by the President, or by the Vice-President in the absence of the President.

Sec. 2. They are to consist of three members unless otherwise appointed by the President. All committees to appoint a chairman to officiate.

Sec. 3. All committees shall report finally within two weeks after time of appointment at the regular meetings.

BY-LAWS.

Section 1. The following order of business shall be observed at all regular meetings :

1. Reading the minutes of previous meeting.
2. Reports of committees and officers.
3. Unfinished business.
4. Miscellaneous business.
5. Adjournment.

Sec 2. In the absence of both President and Vice-Presidents a chairman shall be appointed *pro tem*.

Sec. 3. The yeas or nays on any question may be recorded at the request of not less than five members.

Sec. 4. The resignation of any officer or member shall be acted on at the regular meeting when presented

Sec. 5. All impeachments shall be made in writing and signed by ten members, and all charges shall be fully specified.

Sec. 6. All impeachments must be referred to a special committee to be appointed by the President, whose duty it shall be to investigate the charges and report to the class, at the next regular meeting, and which if in favor of the accused shall be final. Otherwise the class shall deal in accordance with the Constitution, as to whether he shall be reprimanded, suspended, or expelled. No accused member shall be dealt with until the committee has made a final report.

Sec. 7. The expense that this class may incur shall be paid by the members accordingly.

Sec. 8. A proposition for amendment or addition to these By-laws shall be made by a motion and voted upon and adopted at the regular meeting, when passed by a vote of two-thirds of the members present.

Sec. 9. Any portion of the preceding By-laws may be annulled by a vote of two-thirds of the members present.

Sec. 10. To see that the Commencement exercises of the class are properly conducted an Executive Committee shall be appointed by the class, to consist of ten members, as follows: President, First Vice-President, Second Vice-President, Secretary and Treasurer of the class, and five additional members. The President to be chairman of such committee.

Scarvola Keouigh, Wahl.—This plant is employed by the East Indians as an antidote for fish poison. In Dutch Indies it is known as Bapatjeda. The decoction has a very bitter taste, and acts as a diuretic and slows the heart movements. Hartmann has found in the root two glucosides, one in the form of microscopic crystals, which produces the characteristic effects of aconite on the tongue. The other glucoside is a resinous mass.—*Apotheker Zeitung*.

According to a German contemporary, the aniline dye trade is likely to be disturbed by a new patent, which is to be worked in conjunction by the Badische Anilin and Soda Fabrik and the Friedr Layer and Co., Joint Stock Anilin Works. A reduction of prices for some of the dyes will, it is hoped, be compensated for by an increase in the consumption in branches of industry in which the particular dyes referred to have been previously used.—*The British & Colonial Druggist.*

THE MOST RECENT WORK.

Compounds of Antipyrin with Phenols.—Patein and Dufau have previously reported that antipyrin combined with one molecule of either of the naphtols forming crystalline compounds without the elimination of water. They have now investigated the possibility of similar compounds with dihydric phenols of the benzene series being formed. The phenols used in the experiments were pryocatechol, resorcinol and hydroquinol (ortho meta and para dihydroxybenzene). Pyrocatechin combines in the proportion of one molecule of phenol with two of antipyrin, when both bodies are dissolved in water, with the formation of a crystalline compound slightly soluble in cold, easily in hot water, alcohol and chloroform, but with difficulty in ether. It melts at 78°-79°, and gives a greenish black color with ferric chloride. Guaiacol, the monomethyl ether of pyrocatechol, combines with one molecule of the base, and veratrol, the dimethyl ether does not combine at all, thus showing that the hydroxy group of the phenol is the determining factor. Resorcinol and antipyrin combine in the proportion of one molecule of each. The body is crystalline, melts at 103°-104°, and gives a blood-red color with ferric chloride. One molecule of hydroquinol combines with two molecules of antipyrin, forming a crystalline body melting at 127°-128°. It is very soluble in ether, and also in chloroform, in which latter solvent it is dissociated. It gives a puce color with ferric chloride.—*Journal de Phar. et Chim.*

Glucine.—A new product analagous to saccharin has just been introduced. Whilst glucine is the trivial name applied to it, the constitution is that of a complicated sulpho acid, obtained by the action of fatty aldehydes on the dyestuff chrysoidin and afterwards sulphorating. Glucine does not interfere with the digestive functions nor any other organs of the body. It is far less sweet than saccharin, one part being equivalent to 100 of ordinary cane sugar.

The taste differs from that of saccharin. In this respect it resembles sugar rather than saccharin.—*Pharm. Post.*

New Sources of Alcohol.—The possibility of obtaining pure ethylic alcohol from *Asphodelus ramosus* and *Scilla maritima* by fermentation has occupied the attention of G. Riviere and M. Bailhache, who have experimented with pure cultivated wine yeasts. They have previously shown that, by the aid of such yeasts, it is possible to obtain alcohol of good flavor without rectification, from beetroot juice or malted grain. The alcohol obtained from the asphodel and squill is described as being of equally good quality, and the investigators think its manufacture from those sources may constitute a profitable industry, especially in Algiers and Tunis, where both plants grow wild and in abundance.—*Comp. rend.*, cxxi., 659.

Oil from Rubber Tree Seeds.—The seeds of the rubber tree yield a large quantity of oil, which compares favorably with linseed oil. At present this oil has been extracted in small quantities only; but with more systematic regulation of the rubber industry, it is probable that the rubber tree seed will be included among the more valuable economic products. If it proves that such oil, similar to linseed oil, can be obtained in paying quantities from these seeds, it is probable, says *Popular Science*, that from this will be produced the ideal rubber substitute. The nearest approaches to a substitute for india rubber have been made from linseed and kindred oils, and, perhaps, the oil of the rubber seeds may be exactly what has been looked for.

New Aconine Derivatives.—Whilst endeavoring, without success, to synthesise aconitine and benzaconine from benzaconine and aconine respectively, W. R. Dunstan and F. H. Carr have obtained two new derivatives of the last-named compound. Dibenzaconine, $C_{24}H_{37}(Bz)_2NO_{10}$, crystallizes from ether in rosettes of needles (m. p. 265°); but is insoluble in water. Its hydrobromide and aurichloride have been prepared. Tetracetyl—aconine, $C_{24}H_{35}(Ac)_4NO_{10}$, is also insoluble in water, but readily soluble in ether and in alcohol. It crystallizes in small prisms (m. p. 196°) from either of these solvents.—*Proc. Chem. Soc.*, 155, 178.

Toxicity of Acetylene.—In view of the probable increasing use of acetylene as an illuminating agent, the experiments of N. Gréhaut possess considerable interest. The gas used in this investigation was prepared from calcium carbide supplied by M. Moisson, and the subjects of these experiments were dogs and rabbits. As a result, it is stated that toxic effects are producd when acetylene is present in air to the extent of 40 to 70 per cent. The gas is, therefore, much less poisonous than ordinary illuminating gas. The risk of explosion, when mixed with air, is very great in either case.—*Comp. rend., cxxi.*, 564.

NEW REMEDIES.

Pinapine.—This eminently fancy name is used for so simple a body as pine apple juice, the recently extracted juice when allowed to ferment, gives a white liquid, having the characteristic odor of the pine apple. It is recommended for stomachic disorders, especially acidity and chronic cartarrh.—*Rundschau.*

Quinine Carbonate. — This salt is recommended as being far less bitter than the ordinary salts of quinine. It crystallizes in fine needles of the composition $C_{20}H_{24}NO_2.H_2CO_3,H_2O$. It is fairly soluble in water, and easily so in acids, of course, as the CO_2 is thereby evolved.—*Repertoire de Pharmacie.*

Drimys Granatensis.—Some time ago, Schuchardt stated that this bark contained contoine. Hesse has, however, made a very careful examination of the bark, and denies this. He extracted, however, a body $C_{13}H_{14}O_4$, which he terms drimine, as a white crystalline powder. It is easily soluble in hot alcohol and chloroform, but not in ether, alkalies or water. It appears to be an indifferent kind of body, and contains neither hydroxyl or alkyl-oxy groups. Besides drimine, Hesse has found a white powdery substance of acid reaction, very slightly soluble in water. but dissolving in lime water to form a neutral solution. This he terms drimic acid. From the leaves, drimol $C_{28}H_{58}O_2$ was extracted by alcohol in small white needles. This body melts at 73°-74°, and distils unchanged. On acetylation it becomes acetyldrimol $C_{28}H_{57}(C_2H_3O)O_2$ in white tablets, melting at 42°-43°.—*Liebig's Annalen.*

Essential Oils.—Cedro oil, the oil from citrus medica, differs somewhat from citron oil in physical and chemical properties. It forms a yellow liquid of some pleasant taste. Its specific gravity is .871 and its optical activity $+67°.8'$. The genuine oil is said to be unobtainable in commerce. It is very expensive and usually adulterated with citron oil. Natural wintergreen oil has recently been investigated, and minute differences detected between the oil from Gaultheria and that from the birch. That from Gaultheria contains 99 per cent. of methyl salicylate, and the remaining 1 per cent. consists of a paraffin, probably triacontane $C_{30}H_{62}$, an aldehyde or ketone, a secondary alcohol $C_8H_{16}O$, and ester $C_{14}H_{23}O_2$; to the latter the oil probably owes its small optical activity. The birch oil contains 99.8 per cent. of methyl salicylate, traces of the paraffin and of an ester $C_{14}H_{24}O_2$. It is optically inactive. Coriander oil has also received some attention. The oil from the entire fresh flowering plant was found to the extent of .12 per cent. It had a specific gravity of .853. It is not soluble in 70 per cent. alcohol. After standing for a few months, its specific gravity rises to .856 and its optical activity becomes $+1°2'$. The oil from the half ripe herb, with the fruit, has a yield of .17 per cent. It has a specific gravity of .866 and a rotation of $+7°10'$. It is soluble in three parts of 70 per cent. alcohol. Its specific gravity rises on keeping to .869. The oil from the ripe coriander fruit is yielded to the extent of .83 per cent. and has a specific gravity of .876 and an optical activity of $+10°48'$. It is soluble in three parts of 70 per cent. alcohol.—*Schimmel's Berichte.*

Digitalis. — Hendrix contributes a useful paper on the active principles of digitalis to the current number of the *Annales de Pharmacie.* In view of the discussions on the therapeutic value of the commercial products, a short resumé of the paper will not be out of place. Schmiedeberg isolated, sometime ago, four distinct bodies. He distinguished these as (1) digitonine, (2) digitaleine, soluble in water; and (3) digitaline, (4) digitoxide, insoluble in water. No one of these must be confounded with the commercial or official products, which are almost universally mixtures. According to Merck, the pure amorphous digitaline of the Codex and of the Belgian Pharmacopœia, is chiefly the true digitaline of Schmiedeberg with a little digitoxine, whilst the crystalline digitaline of the Codex is almost entirely digitoxine. The powdered digitaline of German commerce (there is no official product) is principally digitaleine with a little digitonine and digitaline. Merck's digitoxine is the pure digitoxine—the most active principle of the drug. Kiliani states that the bodies extracted from the leaf are quite different from those in the seeds; and digitaline does not occur in the leaves, according to this authority. If this is correct, it follows that the digitaline of the Ph. Belg. contains no digitaline at all, as it is prepared from the leaves. As the commercial products are extracted from the seeds, the difference in the therapeutic action of the glucosides and the infusion is easily explained. Whilst Kiliani does not agree with the statement of Schmiedeberg in all particulars, he admits the same formula for digitaline as does the latter chemist, viz., $C_5H_8O_2$, or some multiple of it. With all this uncertainty as to what one is really using, it is by no means surprising that the therapeutic results are found to be so very variable and uncertain, and it is to be hoped that the chemistry and manufacture of the digitalis principles will be undertaken on a more definite basis in the future.—*The British and Colonial Druggist.*

INTELLIGENCE IN PLANTS.

A writer in *Italia termale*, who has evidently given the subject a great deal of study, brings forth numerous instances to show that plants, at least some of them, if not all, possess a certain something, which for lack of a better name, we may call intelligence, and which we have hitherto ascribed to the animal kingdom alone. Among the numerous citations made by the author, we may note the following :

The *Mimosa pudica*, or "sensitive plant," at the slightest touch, at once folds its leaflets, and the least jar of the box or pot in which they are growing, produces the same effect. If the potted plant is being moved, say in a vehicle of any sort, the leaves at first are kept tightly closed, but shortly they open one at a time. The moment the motion stops every leaflet shuts up so suddenly as to appear that the action was instantaneous. The sensitiveness of this plant is marvellous, indeed.

The *Dinoea muscipula*, or "Venus' fly trap," catches flies and digests them. The leaves are shaped like two panniers, and the moment that a fly lights on one they close on it, making it a prisoner. It then exudes a fluid which digests the insect, and is again absorbed, the nourishment passing into the vegetable system.

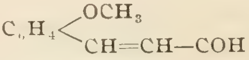
If the stamens of the barberry are touched with a straw they curl up like a snake.

A phytolacca (*Phytolacca Electrica*) bend themselves one by one, each in its turn, to the pistil to deposit their pollen.

Hura crepitans bears a male flower on one branch and a female on another. At the period of fecundation, the bows incline themselves toward each other until the flowers touch the male uppermost. The act of touching is accompanied by a slight cracking or snapping noise, something like the snap of an electric discharge; hence the plant name—the Crepitating Hura.

Finally, there are light-producing flowers, such as *Calendula officinalis*, *Tropæolum majus*, Lilium bulbiferum, and others. Many more, and quite as wonderful examples, might be given ; but those cited are sufficient to show that plants may develop a certain intelligence which, like life itself, escapes definition. —*National Druggist.*

A new Constituent of Cassia Oil.—Bertram and Kursten have found that during the rectification of a large quantity of cassia oil in the laboratories of Messrs. Schimmel & Co. a crystalline residue is left after the distillation of the oil, which can be purified by re-crystallization from alcohol. The crystals form large, well-shaped crystals, in six-sided plates, with oblique edges, melting at 45°–46°, easily soluble in alcohol, benzol, acetone, or ether, sparingly, soluble in petroleum ether, and separating from this solvent in colorless prisms, which are very slightly soluble in water. Under normal pressure the substance boils at 295°, and under a pressure of millimetres at 160°. It possesses all the properties of an aldehyde. Fusion with alkalies gives salicylic acid, and by the action of potassium permanganate, methyl-salicylic acid is formed, and with silver oxide it yields β—methyl coumaric acid. Hence the constitution of the body is probably methyl coumaric aldehyde.



$$C_6H_4 < \begin{matrix} OCH_3 \\ CH{=}CH{-}COH \end{matrix}$$

The correctness of this conclusion is confirmed by the synthesis of this body by means of the condensation of methyl-salicylic acid and acetaldehyde.—*Jour. Prakt. Chemie.*

According to Java advices, boring for petroleum in the Dutch Indies continues to give satisfactory results. In the districts around Sourabaya, the oil wells yield abundantly and a brisk local trade in the product has sprung up. In Mid-Java also the same industry has been started with success. Pipe lines have been laid from wells to the tramway, and tank cars are there filled for despatch to Samarang where oil warehouses are being built.—*The British and Colonial Druggist.*

A PROPOSED NEW PHARMACY LAW. *

A proposed new pharmacy law which is undergoing discussion at present among various pharmaceutical organizations, is as follows: "It shall be unlawful for any person to retail or deliver any poisons enumerated in Schedules A and B without first ascertaining that the purchaser, who must be known to the seller, is aware of their poisonous nature: that they are to be used for a legitimate and stated purpose, and distinctly labeling, with a 'poison label' bearing the name and address of the proprietor of the store in which they are sold, and the name of the poison delivered, the bottle, box, vessel or packet in which it is contained, and, as to the poisons included in Schedule A; besides complying with the foregoing, an entry shall be made, or caused to be made, in a book kept for that purpose, stating the date of sale, the name and address of the purchaser, the name, quantity and quality of the poison sold, the purpose for which it is represented to be required, and the seller's name; said book to be always open for inspection by the proper authorities during business hours, and to be preserved in said store for at least five years, or, in the case of abandonment or removal of store from the jurisdiction of the city, town or county wherein it is located, deposited with the authorized board of pharmacy of that locality.

"Any person violating the provisions of this section shall be guilty of a misdemeanor, and, upon conviction thereof, be fined in a sum not exceeding $25 for violating the provisions of Schedule A, and not more than $10 for violating those of Schedule B.

"None of the provisions of this section shall apply to the dispensing of poisons, in not unusual quantities or doses, upon the prescriptions of practitioners of medicine.

"SCHEDULE A.

"Arsenic and its preparations; corrosive sublimate, white precipitate, red precipitate, iodide, biniodide and cyanide of mercury, cyanide of potassium; hydrocyanic acid; cobalt and its salts, cantharides and its preparations, except the collodion and the cerate made therefrom; creosote; carbolic acid in crystals, or solutions of same containing more than 10 per cent. of the acid; chloroform; chloral hydrate and croton chloral hydrate; croton oil; cocaine and its salts; essential oil of bitter almonds, tansy and pennyroyal; oxalic acid; conium, curare, coculus Indicus, cotton root, ergot, savin, belladonna, calabar bean, St. Ignatus bean, the hellebores, the henbanes, Indian hemp, nux vomica, aconite, opium (excepting Dover's powders and the syrup or other equivalent preparations, liquid or otherwise, of the same; also those preparations containing not more than 9 grains of opium to the ounce), stramonium (except the leaves), and their oils, tinctures, extracts. alkaloids and the salts of same, and such preparations into which any of the above enumerated drugs enter in poisonous qantities.

"SCHEDULE B.

"All other drugs, chemicals and pharmaceutical preparations not enumerated in Schedule A and ranked as poisonous in standard works on materia medica."

In discussing Schedule B, it said that it was "somewhat novel in feature, self-adapting, as it were, and would include new poisons as fast as they became known; the only further legislation required in the future under this law being but supplementary, and would simply

---

* We have just learned that it was decided that the President appoint a committee of Seven consisting of the four professors and three members (practising pharmacists) to draft a new Poison Bill, and report to next stated meeting of the College in January.

consist in transferring from Schedule B to Schedule A such poisons as experience or policy would place there.'' A request to the Legislature to impose penalties on those misrepresenting the purpose for which poison was purchased by them, or giving fictitious names and addresses. will accompany the bill. Copies of this bill were directed to be sent to the various pharmaceutical organizations and boards of pharmacy in the State.

The Sale of Organic Serum in France.—The application of the law relating to the sale of therapeutic serum and other organic liquids of a similar nature, which was passed in April of this year, has given rise to several points of uncertainty. In an article published in the *Union Pharmacetique*, M. Bogelot gives an opinion upon the following question which was propounded to him : "Should one refuse to sell such fluids as those of Brown Sequard and Consiatin Paul to such people to whom one had been in the regular habit of supplying them before the passing of the law?" Such liquids certainly come under the head of injectionable organic liquids, and have hitherto been prepared and sold freely by pharmacists. Considering the strict letter of the law, these fluids certainly come under its application and should henceforth be sold only by means of prescriptions. In a matter of civil affairs or common rights we should say that the law could not have a retrospective action ; and, therefore, that those pharmacists already engaged in the manufacture need not sacrifice their acquired rights. But in the case of a law involving the public health and order, against which no private interests should prevail, it is less certain ; on the other hand, if one ceases manufacturing these liquids, ordered by therapeutic usage, can one also deprive doctors and sick people of a means of treatment which promises to cure them of their special diseases? The proper course appears to be for the pharmacists who have undertaken the manufacture to put the question before the Administration, and ask for either a personal authorization for manufacturing, or for a declaration that the products dealt with do not come within the scope of the law which requires them to be only sold on the order of a prescription. It seems, also, that until the Administration has declared itself as to the interpretation of the new law in this case, pharmacists should, in the interests of sick people, continue to make and sell the products in question.''—*Repertoire*.

SULPHUR MINES IN LOUISIANA.

It looks as if Sicily had shipped its last ton of sulphur to the United States. At the increased rate of production certain to follow, the Lake Charles sulphur mines of Calcasieu County, Louisiana, will not only be able to supply the entire demand of the United States, but of the world for commercial sulphur.

This important piece of news will naturally be of interest wherever sulphur is used, while the facts will cause no small amount of consternation in Sicily, which for many years has held the markets of the world in this important product.

Two and a half years ago F. B. Squire, secretary of the Standard Oil Company, was prospecting for sulphur lands contributory or adjacent to the Gulf of Mexico. Owning large tracts of phosphate lands in Florida, Mr. Squire's idea was to secure sulphur, and thus produce fertilizers in the vicinity of the Gulf, to supply the Cotton States by water with cheap fertilizers. In his search, Mr. Squire made inquiry all over the southern extremity of the United States, extending into Mexico. Nothing that seemed practical materialized, although he by no means had abandoned the idea.

One day, when en route from Cleveland to New York, he met a gentleman on the train who knew considerable about sulphur lands in Louisiana. He was told it was not possible to mine the sulphur, as it was below a bed of quicksand, 300 feet thick. But Mr. Squire went to work, got such men as the Vanderbilts, the Coopers, Rockfellers, the Hewitts and others interested, capitalized a company, experimented with the sulphur, found it could be mined and refined, and now they propose to go ahead and produce the article.

At present 100 tons of chemically pure sulphur are being pumped out of these vast mines every twenty-four hours. This means at least 36,500 tons per annum, or an aggregate equivalent to one-third the entire consumption of the United States. Such an amount, however, under the new conditions, can be increased to any amount necessary to supply the United States.

Sulphur at, say, $5 per ton delivered in Cleveland, is a very different thing to sulphur at $20 per ton, and the demand will increase. The new sulphur company will increase the output to supply the demand of the market, whatever it may be, and as it will cost about 50 cents or $1 to produce it, we may expect a tremendous drop in price and a correspondingly enormous increase in consumption.

If nothing unforeseen happens to this industry in Louisiana, within a few years the Sicilian sulphur industry will be wiped out, and the United States will supply not only the home market, but the world with sulphur, at a price which will quadruple its present consumption and be beneficial to a thousand branches of manufacture.

Oil of Peach-Kernels.—It is sometimes difficult if not impossible to distinguish by physical tests between this oil and true oil of sweet almonds. Dr. A. Schneegans says that there is always as much bromidehyde present in the former as will react with sodium bisulphite solution. The plan is to shake up a small quantity of the oil with a saturated solution of the bisulphite, separate the solution from the oil and add alkali to the solution, when the odor of bitter almonds will appear.

Soap Berry Tree.—In a pamphlet recently published, Prof. L. T. Trabut, of Algiers, describes one of the soap-berry trees, sapindus utilis (s. mukorossi, Goertner, var. carinatus, Radlk.). The fruits of this plant contains 38 per cent. of saponin, more than four times as much quillaia bark, which contains 8 to 9 per cent. only. An adult tree will yield from 25 to 100 kilos. of fruit, and is, therefore, a plentiful source of saponin.

A NAUGHT OF SODA.

The little girl came into the drug store, says the Philadelphia *American*.

"Pleath, thir," she said, "mother thayth have you a naught of soda?"

"A what," repeated the clerk.

"A naught of soda," reiterated the little girl.

"Do you want a glass of soda water?" asked the clerk.

"No, thir. Mother thayth I can't have that till evenin'. She thayth have you a naught of soda?"

"What can she mean," muttered the puzzled clerk. The child grew impatient.

"A naught of soda," she said, sharply. "Why, it ith a funny bottle wif a thquirter to it, and it goeth 'siz' when you work it."

"Oh! You mean a syphon of soda," exclaimed the clerk.

"Oh! Thyphen? Thyphen? Yeth, thir, it wath thyphen. But typhens and naught ith the thame, ain't it?"

And the clerk said that cipher and naught were the same.

Eggs, Wags and the Druggist.—"Yes, I had to move the eggs off the counter," said the Indiana street druggist to a Chicago *Record* reporter. "There are too many bright men in this neighborhood; that's the reason. A dish of nice white eggs sets off a soda counter, but I can't put mine out without getting them dated.

"What? You never heard of dating eggs? See that real estate office over there? Well, that fellow would come over here for a drink, and as soon as I turned my back he would pick up an egg and mark it with a lead pencil, 'April 15, 1895,' and set it back in the dish so that any one who came up to the counter could see it, Of course I couldn't see it behind the counter. I've seen a man come in to order an egg phosphate, but when he glanced at the eggs and saw one on top dated four or five months back, he would weaken and take a plain five-cent drink.

"The real-estate man was the first to do it. He started the others, and they had all sorts of fun with those eggs. I didn't mind it much so long as they dated the eggs 1492 or 1776, but when they dated them about a year back or wrote 'feathers' on them I thought the joke was going a little too far. The trouble was some people who came in didn't know it was a joke. They thought the eggs were six or eight months old That's why I have to keep the eggs on the back shelf.

"Too many humorists in the neighborhood.'

A SEIDLITZ POWDER SAVED IT.

"If there be one thing, upon which I pride myself next to my hobby of the strictest accuracy," remarked Colonel Monkhouse to a contributor to Judy, "it is upon my presence of mind. It has often proved of the utmost value to myself, and also to others.

"On one occasion I saved thousands upon thousands of pounds to a steamship company simply by my habit of rapid thought, followed by equally rapid practice.

"It was on the Mediterranean, when I was on my passage out of India. By some blunder of the first mate, we ran on to a sand bank, and there we stuck. The sea was calm and there was no panic, but the question arose as to what was to be done.

"Wait till the tide rose? There was no use in doing that, for in the Mediterranean there is only a rise and fall of an inch or two.

"The Captain proposed to signal the first vessel that passed to take off the passengers and crew and leave the vessel to her fate, as she was so fast that to attempt to get her off by towing would have been of no use.

"A storm might have proved useful, the captain said, by giving as a little more water, owing to high waves, but there was not even the most remote chance of one; but the observation gave me a suggestion.

"I knew that the cargo we were taking out consisted largely of chemicals. I asked the captain if he knew what these chemicals were, but he did not. We therefore examined the ship's manifest, and I at once knew that the steamer was saved.

"Among the contents of the hold were large consignments of tartarated soda, of carbonate of soda and of tartaric acid. I caused the casks to be brought up on deck, and had the heads knocked out, the two former chemicals being piled up on one side of the deck and the third on the other. At a given signal the whole of the crew started to shovel the material overboard—there was altogether several tons of it.

"Immediately the sea in our immediate neighborhood rose and got into the utmost commotion; though quite close at hand, the water was as calm as a duck pond. There was a heavy lurch, and the vessel slipped off into deep water.

"How was it that throwing chemicals overboard raised a storm? The matter was simple enough. I selected the ingredients that constitute a seidlitz powder; but I did it on a large scale.

"No, I was not awarded salvage; but the passengers and the owners presented me with testimonials."—*New York Telegram.*

Palatable Cod-Liver Oil may be prepared, according to Standke (*Deut. Med. Wochensch.*), by allowing freshly-glowed, granulated charcoal to remain for some length of time in contact with good oil, under the exclusion of air. Every trace of disagreeable odor and taste may thus be removed, it is stated; and cod-liver oil treated in this manner, has a mild and agreeable taste, and is distinguished by its stability. Its palatability may further be increased by the addition of saccharin and cinnamon oil.

To detect Sesamé Oil in Olive Oil, the *Journ. de Pharm.* recommends the following method: Shake vigorously a mixture of equal parts of the olive oil and a 1.14 solution of pyrogallic acid in hydrochloric acid (sp. gr. 1.124), and set aside until it has separated into two layers. Draw off the upper (oily) one, with a pipette, and boil the remainder (acid) for five minutes. If the sample contain any sesamé oil, the acid turns purple on boiling; pure olive oil only gives a yellow color.—It is claimed that the addition of even 1 per cent. of sesamé oil can easily be detected by this method.

SIX HUNDRED ($600) DOLLARS IN PRIZES.

The special attention of our readers is called to the advertisement of the Palisade Manufacturing Co. with the above title on second page of cover of this issue.

The prize contest which this well known firm announces will no doubt attract a great deal of attention, and result in the submission of many articles of merit on "The Clinical Value of Antiseptics both Internal and External." The prizes are extremely liberal, and the well known professional and literary eminence of Dr. Frank P. Foster, the talented editor of the *New York Medical Journal*, who has kindly consented to act as judge, is a sufficient guarantee of the impartiality to be observed in the awarding of the prizes.

We are assured that there is absolutely "no string" attached to the provisions of this contest, and any physician in good standing in the community is invited to compete on equal terms with every other competitor.

Further particulars as to conditions, etc., can be obtained by addressing the above named firm.

THE Alumni Journal

Entered at the New York Post Office as second
class matter.

VOL. III. No. 2.

February, 1896.

Contents:

OUR COMMON EDIBLE AND POISONOUS MUSHROOMS AND TOADSTOOLS 21
By Smith Ely Jelliffe, M. D.
BOOK REVIEWS, - - - 31
THE MOST RECENT WORK. - 34
NEW REMEDIES, - - - 34
EDITORIAL, - - - 35
THE ALUMNI BALL, - - - 36
ALUMNI SOCIABLES, - - 37
ALUMNI NOTES, - - - 38
SENIOR CLASS NOTES. - - 41
OFFICERS AND COMMITTEES OF THE ALUMNI ASSOCIATION, - - 42
WHAT NEXT, - - - 43
AMERICAN PHARMACIES, - 43
THE AUSTRALIAN DRUG CLERK, 44
THE WONDERS OF PHOTOGRAPHY, 46
HOW CAMPHOR IS CULTIVATED IN FORMOSA, - - - - 47
THE PRACTICAL USE OF OZONE, 48
LIQUID AIR, - - - - 48

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . . .

$600.00 IN PRIZES.

We announce herewith a Series of Prizes to Physicians for the best original article on the "CLINICAL VALUE OF ANTISEPTICS BOTH INTERNAL AND EXTERNAL."

First Prize—An original oil painting entitled "Wedded to Science," valued at $250.00 or its equivalent in cash.

2d Prize .... $150.00 in cash.
3d " .... 75.00 "
4th " .... 50.00 "
5th " .... 25.00 "

5 additional prizes of $10.00 in cash.

Dr. Frank P. Foster, Editor of the "N. Y. Medical Journal," has kindly consented to assume all responsibility in judging the merits of the various papers submitted. The papers are to be sent sealed to us and will be delivered intact to Dr. Foster.

For particulars and conditions, address,

THE
PALISADE MFG. CO.
YONKERS, N. Y.

The conditions do not require any mention of or reference to BOROLYPTOL. The articles will be judged solely by their intrinsic value to literature and medical science.

OLDEST STAND ON BROADWAY.

TRADE MARK.
TRINITY CHURCH 1697
MILHAU'S PHARMACY
BALTIMORE 1813.
NEW YORK 1830.
AT 183 BROADWAY.
ST. PAUL'S CHAPEL 1764
CORTLANDT ST.
DEY ST.

Over 80 Years' Unbroken Record! 65 years in Same Spot.

Nearly midway between the two Colonial Churches.

PRESCRIPTIONS PREPARED SOLELY BY GRADUATES

MILHAU'S CHALYBEATE CALISAYA

An elixir containing pyrophosphate of iron; does not injure the teeth.

AGENCY FOR

Dr. DECLAT'S PHENIC PREPARATIONS,

AUTHENTIC ANIMAL EXTRACTS
All the Leading Brands.

THE ORIGINAL ELIXIR: 1830.
MILHAU'S CALISAYA
HIGH TEST. TRUE BARK.

A reliable product by an old house. A Wholesome Tonic, Creates Appetite, Induces Assimilation, Recuperates Strength. Tones up the System in Debility and Convalescence.

VIN COCA
MILHAU.

From prime assayed Bolivian Leaf. Revives, Steadies and Sustains the Nerves. National Formulary, thrice strength of the Imported Wines. Benign, diuretic; while cocaine wines are toxic, excitant.

Milhau's CALISAYA With Coca

Confers wonderful endurance to stand physical and mental exertion.

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER,
183 Broadway, - - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, February, 1896. No. 2.

LIBRA
NEW Y
BOT
GAR

OUR COMMON EDIBLE AND POISONOUS MUSHROOMS AND TOADSTOOLS.

BY SMITH ELY JELLIFFE, M. D.,
Professor of Pharmacognosy at the College of Pharmacy of the City of New York.

It may be a one-sided view of the universe, but we of the human race are rather apt to think that the heavens and the earth and all that in them is, were created for the sole and special purpose of adding to our comfort or pleasure. And when we are brought into sudden and painful contact with the business end of a mosquito or wasp, or find that the edible looking mushroom turns out to be deadly, we wonder in an injured way why such things were made, and imply that it was an oversight on the Creator's part that our convenience was not consulted.

Now, if we could regard mankind as merely an incidental element in the world, and look at life from the standpoint of the several hundred thousand species of fungi that exist, we should be persuaded that all the other plants in the world as well as all the animals, including man himself, were created for the express purpose of prolonging their existence.

Ostensibly our evening is to be spent in finding out what fungi are good for us to eat; but we must admit that we are rather late in our inquiries, for during the last few million years the fungi have been discovering that every created thing was good for some one of them to eat, and since man came upon the scene, they have been finding one way after another to prey upon him. It is therefore only fair that we should devote our attention to turning the tables upon our parasitic friends, and try to discover how best we may prey upon them, without endangering either our digestions or our lives.

Of course, no one will misunderstand me and imagine that the class of fungi called mushrooms, that grow in the fields and woods ever injure man unless he of his own free will has eaten them first. The great foes to life are among the very low but very powerful fungi, the bacteria.

The bacteria which number their victims by the thousands, kill more human beings in a day, than are poisoned by mushrooms in a year.

All the fungi are beasts of prey, speaking from a vegetable standpoint. The germ of cholera, typhoid fever, and consumption, diphtheria, ring worm, and the disease of fungus foot, known in India, present types of the fungi that live upon the human body. Yeast lives upon the flour and sugar in the process of bread making. Moulds live upon bread and cheese and preserves, while the higher fungi which we call mushrooms or toadstools indiscriminately, draw their life in a more harmless way, from decayed animal matter, or from manure, or dead wood.

The ancients were very superstitious about the fungi, although there were a number which they were accustomed to eat. Their idea was that they were formed during thunder showers, which was not so far wrong after all, and that the gods were directly responsible for them.

There is something very wonderful in the way the mushrooms spring up over night. Apparently it is only necessary for some genius of the woods to repeat a mystic formula like that which raised Aladdin's palace and the umbrellas appear already formed. The growth is however not so sudden after all, for long before any thing appears above ground the fungi are being slowly formed under ground. The mycelium which corresponds to the root stem, and leaves of a higher plant is slowly pushing its way through the crevices of decayed wood or sucking the nitrogenous food out of old and exposed manure. Here and there on the masses of mycelium tubes which appear like bundles of tangled white threads, and which the cultivators call spawn, there will appear a small knob. This is the incipient fruit body which will afterwards become the umbrella.

The illustration shows the method of development in the common and edible field mushroom. The small knobs are embryonic umbrellas which grow very slowly. Little by little the cap or umbrella is formed, but tightly compressed, until in a small space everything is perfected. As long as the weatner remains dry the umbrellas literally "lie low," but as soon as the ground has become soaked with a heavy rain, they absorb the moisture as a sponge would and swell in a few hours to their full size. It is a difficult thing to actually watch the transformation. One observer watched all night to time the growth of a fungus that was nearly ripe, and just before dawn he was rewarded by seeing it grow three inches in twenty-five minutes.

When the umbrella swells, the covering which has bound the cap down to the stalk breaks and frees the cap so that it can stretch out to its full size. Generally at first the umbrella appears half open, later it is apt to be almost flat, and when the mushroom is quite old it has a tendancy to turn inside out. The covering originally over the mushroom is called the veil, and when it leaves a tattered fragment clinging to the stem after breaking, the remains are known as the ring.

When the gills are finally spread out straight, the fungus is ripe and ready to shed its spores which grow all along their edges.

Not all of the higher fungi have gills, however, and one of the first points to be noticed in classifying them is the character of the under surface. In other species the gills become irregular ribs, and in others they form short spines on which the spores are borne. Still other kinds have a smooth under surface dotted over with minute pores out of which the spores drop when the fungus is ripe.

Other fungi such as the puff-balls cannot scatter their spores by the simple process of dropping them on the ground. They are wholly surrounded by a skin, and the spores are born inside on threads, and when the puff-ball is ripe, the skin cracks and the spores escape like a cloud of dust.

In still another kind of fungus the spores grow inside enclosed in a lot of small sacs, each of which holds a certain number. These fungi have to wait for decay to set the spores free. The truffle of England and France belongs to this class. In a cross section of it the little oval shaped sacs may be seen crowded with spores. This fungus is round and is buried several inches under ground so that men have to dig for it, and often depend on dogs to scent it out. In France when a wide awake boy sees his dog pawing industriously at the foot of a tree, he is on the alert for truffles at once, and will start to digging himself for this marketable delicacy.

The morel or American truffle as it is sometimes called, has its spores imbedded in the same way, although it does not resemble its foreign cousin, for it grows above ground. It is not so well known here as in France and England. Although there is not so great a delicacy as the truffle, yet it is eaten quite freely.

I have read that in Yorkshire the women that gather cowslips to make cowslip wine, took a few morels in the corner of their baskets in hope of making an extra shilling.

The only difficulty in cooking it is that the earth is apt to get into the pitted surfaces, and the morel has to be well washed and dried in a napkin before it is put on to stew, otherwise one is liable to eat a considerable quantity of their allotted peck of dirt, in one meal.

This well marked and easily recognized species grows commonly in some parts of the country and is not found in other places. It comes up in April and May, and is fond of grassy places near streams. There is no danger in trying it if one is fortunate enough to be where it grows for it has no dangerous relatives that parade in sheep's clothing trying to pass themselves off as the genuine article.

There is a very palatable substitute for pan cakes or egg plants, in some species of the puff ball group of fungi. All the species of puff balls or *Lycoperdons* are edible, that is they are not poisonous; but some are not very palatable, for instance those with warty yellow skins, and those that are all inky black inside can scarcely be considered tempting. The giant puff ball is a delicious article of diet. Puff balls must be gathered at just the right time, however, when the insides are white and fleshy for when they have yellow stains inside they are not fresh, and if they are cottony and dusty it shows that the spores are formed on their threads and they are too old to be good.

The giant puff ball will sometimes grow to be 20 inches in diameter, but it is then too apt to be like cotton wool to make good fritters for any day in the year except the first of April. The best and most convenient size to cook is a medium one about the size of an apple. The skin should be removed and the puff ball sliced, as one would a tomato or egg plant, and then be dipped in batter or egg, and fried.

One enthusiastic Italian mycophagist says that when the puff ball is conveniently situated one should only take a single slice at a time, cutting it off horizontally and very carefully. It will then go on growing, and one can have a fresh fritter every day in the week. Possibly the Italian gentleman had a castle in a ravine where the puff balls grew thick about his kitchen door. Personally I should hate to have to go up to the Bronx every morning to cut my fritter.

Before advancing to the more complicated fungi that have pores, there are several families whose reputations are unsullied by the connection of poisonous members. But just as some people whose reputations are perfectly blameless, and their family connections irreproachable, are nevertheless hard-hearted and unattractive, so among these non-poisonous families we find many that are tough and leathery and anything but inviting.

Among the *Clavarias*, or club fungi, many of which would be as unsavory as corks, there are some delicate, coral-like species that make a very good sauce when stewed. They are either grayish-white or yellow to brownish, and very brittle and of course do not keep their shape when cooked. Any of them however that are not bitter and which seem tender enough to crumble up in a sauce may be eaten without danger, as they will be found to give a good flavor without any danger of running across poisonous species.

There is a large class of fungi that have pores on their under sides. The whole lower surface when slightly magnified will be found to have a honeycombed appearance by reason of these regular holes or pores, out of which the spores drop when the fungus is ripe. Sometimes one will find them in a soft, velvety state, just shedding their spores. Some of them are umbrella shaped and others grow like shells with beautiful irridescent rings of grey and green and purple on their upper wavy surfaces. These are too woody to eat; so also are the beautiful shell fungi that hang like brown polished ledges from the dying trees or decaying stumps. On these the pores may be plainly seen when the white bloom on the under side is scraped away. The whole family of fungi that have pores are called *Popyporii*, but from the edible and poisonous standpoint there is one group that is of special interest known as *Boletus*. These all have a stem and a more or less regular cap. They must each go upon their respective merits, for some are edible and some are not.

The Boleti are always thick and fleshy, never woody, and quite solid in their appearance. If the cap be cut off and magnified the under surface will present a honeycombed appearance, which is due to the opening of the pores or tubes in which the spores are contained. These tubes lie crowded close together, as a cross section of the fungus will show to the naked eye. Many Boleti change color when they are cut.

There are altogether about forty edible species in this family, and several that are poisonous or at least very fiery and peppery to the taste. Those that are commonly eaten have a very fine flavor, As a rule it is pretty safe to try a mild colored Boletus, such as *edulis*, which is brownish on top and yellowish underneath, or *luteus*, and which is yellow. Some which are slightly acrid to the taste when nibbled raw, are very good when cooked and made into a sauce or fried. Those with white or yellow or greenish tubes are generally safe to eat, but a wise rule for the inexperienced is to avoid all lurid or high colored *Boleti*.

One called *Satanus*, or Satan's Boletus, is amber colored on top and deep crimson below, and is quite poisonous, so also *Boletus alveolatus*, whose rosy red top acts as a danger signal.

You have probably all heard of the beef steak fungus of which there is a tradition that one was found in England weighing thirty pounds.

The beef steak or liver fungus is worthy of its good name, for it really resembles meat in its flavor. It is also called "Poor man's fungus," for it is claimed that it contains as much nourishment as meat. Its scientific name is *Fistulina hepatica*, *Fistulina* refers to the fact that it has little tubes on its under side which groups it with those fungi that have pores instead of gills, and *hepatica* means liver-like, and refers to its general appearance, which resembles the color of liver.

It grows on stumps of trees, principally oaks and chesnuts, and its first appearance is like a little rosy pimple. In a few days it becomes tongue shaped, thereby causing the Italians who are fond of it to call it "oak tongue." or "chestnut tongue." If there is rain, it will soon grow broad and deep red, but in dry weather I have watched specimens that hardly grew a half inch in a week. Of course, when they are old, they are tougher than the toughest old steer that the most unprincipled butcher would seek to palm off on an innocent public, but when they are young and tender they may be fried in butter or minced with herbs, and make really a very nice dish.

I hear that this fungus grows quite abundantly in Bronx Park. I have found it in several places on Long Island, and I have no doubt but that it may be found in Prospect Park, although I have never happened to see it there. It is therefore by no means uncommon with us, and probably by diligent search on the stumps of oak and chestnut, one might find considerable quantities of it near at hand.

Cantharellus cibarius, is another edible fungus that does not belong to the class with true pores nor to those with gills; it has a transition form which is provided with ribs, and is therefore allied to the fungi with true gills. This fungus might be called the edible golden cup fungus; if its classical name were to be literally translated. It is eaten in some places in Europe as a staple article of diet. Its appearance is quite characteristic, and it is therefore easily recognized. It has a stout, tough yellow stem, and a cup that will hold water, it is just about the color of the yolk of an egg. Generally, it is a little one-sided, and has revolute edges, which makes it the dispair of the amateur to sketch.

Because it is so easily recognized, it would be safe to recommend it were it not for the fact that its virtues are shadowed by the close resemblance of a disagreeable species of the same kind. The poisonous *Cantharellus* is often found in rank grass and decaying herbage. It is just the same color, but instead of being smooth and waxy, it is covered with down, and the ribs and veins are very crowded and thin.

We now come to that class of fungi which has gills and which contains the more interesting species. They are all called *Agaricus* or mushrooms, for the word mushroom is the common name for any specimen of the great group *Agaricus* each with a different name.

There are in the group at least two hundred edible species, a great many that are neither edible nor poisonous, simply disagreeable to the taste, and a certain number that are deadly poison. To know them all requires an immense amount of study, but this is not necessary for an accurate knowledge of a few, for if one will but notice carefully certain points, and not be led away by general resemblances in shape and color, it will be possible to be absolutely sure of a few species that are good to eat and those that are notoriously dangerous.

In making a study of the fungi, it is necessary after noting the size, shape and color of the specimen, and where it grew, to jot down observations upon the position and character of the veil, also the size and shape of the gills, whether they are of equal or unequal length, also whether they change color as the mushroom grows older, or after it has been picked.

Still another point to be observed and

noted, is whether the gills change color as the mushroom grows older, or after it has been picked.

SPORES.

Another important thing is to find out the color of the spores. This can be done by cutting the cap off and laying it gill-side down on a piece of paper. Dark paper shows up the white spores better than white paper. After leaving it a few hours there will be found a perfect ring of spores, either white, sulphur colored, pink or brown, with as many transition shades as are found in a description of a spring fashion plate.

It is probable that the fairy rings arise from the scattered spores of a single fungus. One mushroom exhausts the nourishing power of the soil under it and most of its spores must fall upon pre-empted ground ; but those on the outer edge may find nourishment enough to develop a few struggling mycelium threads. These produce a cluster of mushrooms around the circle vacated by the parent; and in turn exhaust the soil. So with each successive generation the ring grows wider until at last if accident or stones or weeds do not prevent we find a fairy ring in all its perfection.

Nobody fears the edible field mushroom, but to many it is the only edible species they will touch without fear and trembling. It is easy to distinguish it if one knows other species and realizes how much some poisonous kinds resemble it. Its color is a dirty white or grey on top, it has a short stem with a white wooly ring around it. The unequal gills are a delicate pink at first, but later they turn to a brownish purple owing to the color of the spores which are purplish, *never white.* One important thing to remember is that it never grows in woods, but always in fields and preferably in pastures where cows or sheep have fertilized the soil and kept the grass cropped. In such places from August to October one may be almost sure of finding a good crop of field mushrooms, that is if there has been rain.

As a rule most people who know the common field mushroom are apt to lay down rules for edible species based on its characteristic dirty grey top, its brown-pink gills and purple spores, but the more one studies the family the more difficult it is to give any general rules by which the edible species can be distinguished from the non-edible. It is like the French rule for forming the plural, the exceptions are so many, and the exceptions of the exceptions so much more numerous; that the original rule is completely lost to sight.

So my advise to beginners is not to choose fungi for a meal by any general rule, but by carefully comparing a specimen point by point with some well authenticated work, till it is as familiar to you as a potato or a turnip and eat no others.

The field mushroom has a poor relation that is often avoided because it is not exactly like its more popular relative. This is the horse mushroom, or *Agaricus arvensis.* It is a little larger than the field mushroom, and it is pure white on top. Its gills are at first a beautiful pink, but when the mushroom is older they are apt to turn a brown to purplish or to black. It is very delicate to eat when it is young and still pink underneath, and none but the epicure would be the wiser were it to be eaten by mistake instead of the field mushroom, but such is the popular prejudice against it that the cultivator cannot sell it in the market except for catsup or pickles, but for that purpose large crops of it are raised. It may grow on the borders of woods or the borders of garden beds ; also about stables.

AGARICUS PROCERAS.

A very common mushroom that has been eaten since the days of the Romans is the Parasol Agaric, *Agaricus proceras.* It is sometimes called the shaggy mushroom, for its parasol top is covered with scales. One author says of it; " Whenever a large parasol shaped mushroom is found with white gills, a long spotted stem, swollen at the base, with a ring that will slip up and down, it must be the parasol mushroom, and it can be eaten with perfect safety."

There is a general saying that all fungi which have a milky juice are poisonous, but there is at least one, *Lactarius deliciosus*, or the golden milk fungus, that is very good to eat. The milk flows out of the gills when they are bruised, and as far as looks go it certainly appears poisonous, for it is an orange or red liquid which turns greenish on exposure to the air.

There is a mushroom very similar in size and shape that gives an innocent white milk, but it is poisonous.

So also is the fiery milk mushroom, which is white or cream colored and very appetizing to look upon. But its taste is biting, and a little nibble of it has the effect of biting and searing the tongue like a hot iron. Some writers say that this species is eaten in Russia and other countries. and that pickling it takes away the bitterness. However that may be, it is known that cows will eat it eagerly, but it makes their milk bitter and very disagreeable to the taste.

Another group of the Agaric or mushroom family that contains edible as well as non-edible species, is the *Russula* group. The beautiful pale rose mushroom with a cap that deepens to red, and pure white gills, belongs to this group. But in spite of its attractive color and its neat clean look, it is well to leave it alone, for it is *Russula emetica*, and although I cannot promise that if you eat of it you would surely die, yet I can assure you that it is well named, for a meal of it would act as an excellent emetic.

Another Russula that is very beautiful but not so attractive from its green, warty appearance, is *Russula virescence*, the *Verdette* mushroom. It is not very well known here, and its green color causes a feeling of prejudice, but in some parts of the continent it is a great favorite. They say the peasants in the neighborhood of Milan are in the habit of toasting it over wood embers and eating it with a little salt.

There is no doubt whatever about the excellent qualities of the very common and very variable Russula that grows in our woods. called *Russula heterophylia.* It is pure white on the gills and has no ring or bulb, and its cap may be either greenish or gray with a little purple in it or yellowish brown. To know it you must see it in all its hues, and to appreciate its delicious nutty flavor it must be fried in sweet butter and eaten hot as a relish.

I have found it in Bronx Park, in Long Island and in the woods of Connecticut. It is by no means rare, neither is it very common, but it has such a delicious flavor that it is worth while learning it under its many disguises of color, and searching for it, every time one takes a walk through the woods.

COPRINUS COMATUS

Is an edible mushroom, quite different from that have been described before. It is called the "maned mushroom," and it is used by the English for catsup, as it has a rich juice, but it is only within the last few years that it has been recognized as an edible in this country. It has a suspicious look when it begins to grow old, for it becomes quite black around its lower edges. It never should be eaten when it gets to this stage, but only when it is young. I have found it in the Quaker cemetery in Prospect Park.

Of all the poisonous mushrooms, those belonging to the group called *Amanita*, are the most interesting, because some of the species resemble so treacherously some other edible species of other groups, to all but the initiated.

The one that is most commonly mistaken for the edible field mushroom, is the common Spring mushroom, or *Amanita vernus*. It is white all over, even on the gills, which is not the case with the field mushroom. It comes in the spring time stead of the autumn, and it grows in the woods instead of in pastures and fields.

Another point to be noticed in this as well as in other species of this group, is that there is a sheath at the base of the stem; this is the remains of the volva. Some mushrooms when young as we have seen, are completely covered with a membrane like a delicate eggshell. When this ruptures a portion of it remains at the bottom, and often some of it sticks to the cap in little warty excressenses. Not all mushrooms with a volva are poisonous, *but* it is wise as a rule for the uninitiated to leave a specimen alone, if it is provided with this sheath at the base of the stem.

Experiments show that a dog that was fed upon a little cake made of this mushroom, died six hours after eating it. It is recorded among many other cases that a French gentleman, his wife and child ate of this mushroom, at six o'clock one evening, and that the next day they all suffered from nausea and fainting. The father and child died, but the woman's life was saved by the use of emetics and stimulants. She, however, continued to feel the effects of the poisoning for six months after.

Yet in this so called deadly group Amanita, whose very name is a symbol of death, there are several deliciously edible kinds. One of these is called Caesar's mushroom, or Amanita Caesari. When it first appears it pushes itself out of the ground and sits up on end like an egg ; it is pure white for it is covered at first by the volva which is present in all the Amanitas and which is therefore taken as a danger signal by the wary. After a few days there appears something that looks like the yolk of an egg, of a yellow or orange red color protruding from it. This is the first visible glimpse of the umbrella. If the weather is damp it will go on increasing in size and unfolding, until the whole umbrella in the royal colors of Caesar bursts forth. This edible Amanita is not very common, but it may be found in damp woods and hilly places all summer. It is a curious thing to watch growing, and someone in describing it, called it the "poultry mushroom" from its egg-like appearance when it first pushes its way out of the ground.

Although this particular Amanita is good to eat, the group as a whole should be studied for the purpose of avoiding it for it is not very safe to try experiments with it as some of the species are fairly good when quite young and very poisonous when older, and others are only fit to eat if they have been prepared in a certain way.

The place to look for danger in the Amanitas is not in the color but underneath the cap, for all the Amanitas have pure white gills and white spores. They all spring from a volva and have the remains of it attached to the base of the stem. This base is always bulbous. This combination of characteristics constitutes the danger signal and when they appear, beware!

The Fly Mushroom is said to be one of the deadliest. It is a magnificent one to look at, with its tall straight stem and hanging veil, its large symetrical orange or clear yellow cap, and its pure white gills. It is a much neater, cleaner fungus than many of the edible kinds, perhaps it is in that way that so many of the Amanitas work destruction, because they are so unsuspicious and attractive in their appearance.

The poison extracted from it is an alkaloid called muscarine, which is used in the manufacture of fly poison. I was interested last summer to find several dead flies lying close to a yellow cap I had cut off and laid on paper over night for the purpose of obtaining the spores. On testing it I found that flies and small insects succumbed after merely walking over it.

There are some curious stories told of this particular mushroom. It seems that the natives of Kamschatka, and certain tribes in North Eastern Asia, have used this fungus since time immemoriable as an intoxicant, instead of wine or brandy or opium. They collect in hot weather and try it, or, if it dries on the ground so much the better. Then when they have a stock of it they hold an orgy. One or two of the the tried specimens form a dose, they swallow it without chewing it, and in course of time become delightfully, happy and riotous. They jump and dance and tell all they know, and show signs of great intoxication. They know just how much they dare take, for a larger dose would prove fatal.

The name muscarine is applied to the poison of many of the Amanitas. It has been found that the poison can be boiled out, for a quart of water in which some of these mushrooms had been boiled, killed a dog in eight hours, when the boiled mushrooms themselves were fed to two other dogs without any bad effects.

This explains the stories we hear of the Russians eating our poisonous species as food; for many kinds can be eaten when dried and pickled which would otherwise be poisonous. The brine serves to draw the poison out just as it does in egg-plant, which if eaten without being soaked in salt and water would have a poisonous effect.

As an illustration of the digestive powers of some persons, it is told that a gentleman who was detained as a prisoner in a small town in Poland amused himself by making a collection of the fungi of the neighborhood. He had all kinds edible and poisonous, when suddenly his collection disappeared. Investigation showed that it had been stolen and eaten by the soldiers who could not resist the temptation to appropriate such a wholesale delicacy.

Out of forty species of Amanita only eight are really poisonous, and possibly they would be almost harmless if taken in small quantities, or boiled or pickled. The danger lies in all cases in eating them in good faith as field mushrooms, for in an average meal there is sufficient muscarine taken into the human system, to act as a powerful poison.

When a physician is called in to aid a victim of mushroom poisoning his first object is to learn how long after eating the effects were first felt. For the minor poisons manifest themselves in four or five hours, and the deadly poisons of the Amanitas seldom take effect under eight or twelve hours.

It must be remembered that many of the non-edible mushrooms do not endanger life. They merely cause sickness due to their acridity or to some peculiar property. Even the good field mushroom has been known to produce illness, but one also *may* read of cases on record where unripe peaches and over-ripe watermelon have had the same effect. Any mushroom that is not perfectly fresh may produce a minor poisoning, but relief can generally be obtained in the same way as in illness caused by fruit poisoning, *viz.*, by emetics and purgatives.

As long ago as in the second century, Dioscorided made the observation that some cases of fungi poisoning were due to indigestion from eating decaying specimens or leathery kinds, and not to a true poison.

If a physician does not know anything about the different species of fungi, or if he does know them, but has no samples to examine, and is obliged to depend on the time test, he has to remember that if his patient has made a very promiscuous meal of mushrooms, he may have eaten the less dangerous which produce sickness within a few hours, and also some of the *Amanitas* that will not produce symptoms until the next day, therefore he may have to resort to two entirely different methods of treatment, and though relief may be given after treatment for a minor poison, he must watch for symptoms of a more dangerous character.

When muscarine begins to work, the victim is generally very nauseated and faint, and suffers paroxysms of great agony. The effect of the poison is to depress the heart action, and to paralyze the centers of respiration.

This fact was discovered in this country by a Dr. Shadle, when he was called to attend a family of five persons who were all suffering from the same distressing symptoms. The day before they had all eaten heartily of field mushrooms, which, they had gathered in the woods. Probably their repast consisted of the Spring mushroom, the one that so much resembles the field mushroom save for its pure white gills.

Two of them had tried to see which could eat the most. All began to suffer violently at daybreak the next day. A neighbor to whom they had extended the courtesy of their delicacy was also taken ill, and even the cat who had the scrapings of the dish was sick.

Dr. Shadle applied heated bricks to the ice-cold extremities of his patients to restore circulation, and tried to rally the falling heart action by stimulants. Finally he concluded that the poison, whatever it was, was narcotic in its nature and acted on the nerve centers, especially those governing the function of respiration and in the action of the heart. Accordingly he began to administer atropine in larger and larger quantities, and found that a perceptible improvement in the heart action followed each dose. Three of the patients lives were saved, but the two that had eaten the largest quantities died. Since then Atropine has been tested and found to be a perfect antidote for the poisonous alkaloid of the *Amanitas*.

It is late in the year to try to get up an enthusiasm for something that is past for the season. The woods are barren of edible fungi, and whosoever longs for a dish of some of the common kinds that the connoisseur pronounces so delicious must content himself with pictures of them for the winter, unless he would like to try the experiment of cultivating them. It in not an unusual thing in Europe for the wealthy as well as the poor to have their own mushroom beds, and cultivate in the house or yard enough mushrooms for their own use. In fact, enthusiastic writers on the subject of mushroom culture express themselves as lost in amazement that more enterprizing Americans do not have private mushroom beds.

In this age, when women have turned to account every faculty for developing industries and making money, it is quite possible that they could go into the undertaking with great success, either to provide themselves or their friends with an expensive luxury or to turn pennies into dollars at a rate far beyond the wildest suggestions of confidential advertisements.

The first two requisites for the successful culture of mushrooms is an even temperature of 50 to 60 degrees, and a quantity of manure A farm is the easiest and best place to start a mushroom bed, for after the manure has been properly dug up by the farmer or one of his hands, his wife or daughter can attend to it with more profit than they can to poultry.

The making of the bed is of course the chief labor. Good clean horse manure mixed with some from the cow's stable should be turned over every day for two or three weeks. It should then be packed in shallow trench and the spawn, which is nothing more or less than the mycelium threads packed closely together, should be stuck into the manure at intervals, and the whole thing covered with fresh rich earth and watered occasionally.

A cellar is, however, an ideal place for mushrooms. If the manure is prepared away from the house it will not give a disagreeable odor when packed and covered.

An Englishman, when writing of a visit to a friend's house, says that when he went down to his cellar to see his method of heating the house, by some hot water system, he found all the available space on the floor covered with little flat mushroom beds that were perfectly odorless, and that had been bearing good crops from November to May.

There are plenty of practical directions for the culture of mushrooms in the agricultural reports and in agricultural magazines, and the large florists and horticulturalists sell the spawn in cakes which can be broken up into bits and sown through the bed. Once it is prepared, if the temperature is constant, all growers declare that beds need but comparatively little attention, and that a crop can be gathered every other day. There seems, then, to be no reason why we should not cultivate this delicacy all winter, until the summer woods and fields provide us with the great variety which nature offers.

BOOK REVIEWS.

Semi-Annual Report of Schimmel & Co., (Fritsche Brothers), Leipzig and New York, April and October, 1895.

Few pharmaceutical publications of the year are of more interest and value than the one here under review, not only by virtue of its original contributions to our knowledge of essential oils, but through its intelligent representation of the changes in and present state of the commerce in them. The most striking feature in the reports of this year, particularly the April report, is their unmistakable evidence of a marked improvement in the quality of this class of products as found upon the market. We feel that the columns of the Materia Medica Department of the JOURNAL cannot be better used than in printing a resumé of this subject compiled from the reports before us.

The growing importance of ionone is attested by the fact that the Company has thereby been obliged to abandon its cultivation of violets, replacing this plant by experimental fields of coriander, parsley, celery and angelica, designed to provide material for the purpose of scientific and practical research, as to the genesis of volatile oil in plants. The first fruits of these experiments are comprised in the following facts established with reference to oil of coriander. The entire plant distilled in a fresh condition during the period of flowering, yielded 12 per cent. of an oil with specific gravity of .853, insoluble in 70 per cent. alcohol, and with an extremely bug-like odor, which almost disappears after keeping for two and one-half months. The entire plant distilled when the fruit was half ripe, yielded 17 per cent. of oil having a specific gravity .866, soluble in three parts of 70 per cent. alcohol, and with a somewhat buggy odor. Oil from the ripe fruit distilled immediately after harvesting, yielded 83 per cent. of oil, having a specific gravity of 876, solubility same as the last and of a pure coriander odor. The promise is made that similar experiments will be made next year upon the oil of caraway which is better suited for the purpose.

Peppermint oil was distilled separately from two parts of the same collection, the first in a fresh state, the other after being very carefully dried. The former showed a specific gravity of .912, the latter .915, and there was a marked difference of odor in favor of the former. Careful estimates are made for the crop of American peppermint oil for the year 1895 as follows:

Michigan, 100,000 pounds to 110,000 pounds.

Indiana, 27,000 pounds.

Other localities, 10 000 pounds.

The average yield per acre in New York is from old plantations 18 pounds per acre, from new plantations 23 pounds per acre.

Experiments similar to those above recorded with peppermint were conducted with angelica root, calmus, tarragon and other articles and the result summed up in the statement "that the future of the distillation of essential oils lies in the employment of freshly gathered, raw material."

The important subject of size, development of roots, etc., as affecting oil percentage is somewhat elucidated by the following experience with angelica root: "The damp weather of the year 1894 has naturally exercised a considerable influence upon the development of the roots of the angelica plant which attained an extraordinary size. On some of our Miltitz fields we harvested a few really extraordinary specimens, but they contained much water and were poor in oil. The same experience was met with last year by the sugar factories in the case of the sugar percentage of the beet. Taking the figure 100 as a normal oil yield of angelica, the yield in the very dry year 1893 was only 80, and in the very wet year 1894 the average fell as low as 60.

The following differences were found between the oil from angelica root and that from leaves and buds distilled before the expansion of the flowers. The oil from the herb has a specific gravity of .886 at 15 degrees C. an optical rotation of +20 degrees to 25 degrees. That from the root has a specific gravity of .863 to .918 at an optical rotation of +25 degrees to 31 degrees. The herb yielded only .09 per cent. of oil.

The deterioration of the oil of bitter almonds by the oxidation of benzaldehyde into benzoic acid is described, and the impractibility of preventing it by the perfect exclusion of air is remarked upon as having led to experiments looking toward its prevention by the addition of alcohol. From these it is concluded that the addition of 10 per cent. of alcohol has a strong preserving influence, and that a smaller addition not merely fails to act as a preservative, but is directly injurious to the oil.

To so great an extent is the consumption of anethol replacing that of anise oil, that the firm's sales of the former have reached five times that of the latter.

The researches of Power and Kleber on Bay Oil, previously published in the *Pharmaceutische Rundschau* are discussed, and the following scale of its constituents presented, those existing in the largest amount standing successively before the others.

Eugenol, Myrcene, Chavicol, Methyleugenol, Methyl-chavicol, Phellandrene, citral. The fact is emphasized that the test for pinene determines adulteration of this oil with oil of turpentine, and the method of testing described.

The decrease in the consumption of cajuput oil is noted and taken in connection with the corresponding increased consumption of the very similar article Eucalyptus oil, the explanation is not difficult.

The physical properties of calamus oil have undergone examination with the establishment of a specific gravity of from .962 to .970, and a rotation of + 13 degrees 8 minutes to 31 degrees. It is pointed out that adulteration with cedar wood oil or a fraction from gurjum balsam could be made without affecting the specific gravity, while it would lower or even reverse the rotation, and it is believed that such adulteration has been encountered in commerce. It is considered that + 10 degrees, is the lowest rotation proper for a pure sample, which must give a clear solution with 90 per cent. alcohol in all proportions.

Difficulty of obtaining supplies of camphor oil are considered to be due to the consumption in Japan of nearly the whole of the product, aside from any influences of the recent political situation.

The sale of caraway oil from which a portion of the carvol has been extracted and the sale of adulterated carvol, are said to prevail to an alarming extent. The former product is readily distinguished by the falling of its specific gravity below the normal, which is .908 to .910 at 15 degrees C.

The adulteration of cassia oil has been stimulated by the scarcity of supplies, and it is stated that the greatest care is necessary in the selection of this article. The principal adulterant used in the country of production is said to be resin, while alcohol is found to have been added to parcels after their receipt in Europe. It would appear that the determination of the cinnamic aldehyde is the only reliable method of determining the value of this important oil. The firm considers that a satisfactory sample should yield from 70 to 75 per cent. of aldehyde.

Certain observations are reported as leading to the conclusion that cedar-camphor, of which mention has frequently been made in older literature, "is not a constituent of fresh cedar wood, but is formed in it only in the course of prolonged preservation of the wood under favorable conditions."

Spurious oils of matricaria are at least in some cases indicated by their failure to congeal to a buttery consistency, due to the presence of paraffine, which are a constant constituent of the genuine article.

The exports of citronella oil from Ceylon have grown from six and one-half million ounces in 1885 to more than fifteen million ounces in 1894. The United States stands second in the consumption of this article, taking about sixty per cent. of the amount taken by the United Kingdom. Considerable quantities of this oil are consumed in the manufacture of geraniol.

The product of East African cloves for the year 1894 is said to have reached the enormous total of about 18,000,000 pounds. Some very valuable contributions to our knowledge of clove oil are contained in the October report, but cannot be here reproduced.

A new variety of coriander fruit from Tunis is reported, its size intermediate between the Dutch and the Moravian, of good bright color and fine aroma, but not especially rich in the yield of oil.

Prof. H. H. Rusby.

(*To be continued.*)

THE MOST RECENT WORK.

Effect of Electricity on Plants. — According to the results obtained by Prof. A. Aloi, both atmospheric and terrestrial electricity exercise a favorable influence on the germination of seeds and on the growth of plants, as is shown by their quicker germination and by their yielding a greater weight of produce in the same time. Prof. Aloi anticipates that the application of electricity will be one of the most important new appliances in the agriculture of the future. — *Bulletine de la Società Botanica Italiana.*

Systematic Arrangement of the Elements.—Julius Thomsen (*Zeil. anorg. Chem.*, *1895*), arranges the elements in ascending order of atomic weights in three main groups, of which the first contains two series of seven elements, the second two series of seventeen elements and the third thirty-one elements. Hydrogen stands by itself. Electro-positive elements are at the one end of each of the four smaller series and electro-negative elements at the other. The arrangement serves to show relationships between the elements beyond those shown by the ordinary periodic scheme.

Chemical Phenomena of Osssification.—P. Camille Chabrié (*Compl. rend.*, 1895), has found that the conversion of the fundamental cartilagenous matter into the fundamental osseous matter is the result of a simultaneous oxidation and the substitution of the amido group for the hydroxyl group, the change being brought about by the influence of ammonia or ammonium salts in an alkaline medium, but not in the presence of lactic acid. The same change seems to be brought about in the organism by urea in consequence of its ready convertibility into ammonium salts, Ammonium carbonate destroys the blood corpuscles, with liberation of lecithin, which acts as a feeble base and combines with carbonic acid. If lecithin, emulsified in water, is added to a mixture of sodihydrogen phosphate, and sodium hydrogen carbonate, to which some calcium chloride has been added, a precipitate of calcium carbonate and phosphate is formed, owing to the combination of the lecithin with the carbonic acid that would otherwise keep them in solution. It would seem, therefore, that the lecithin set free by the destruction of blood corpuscles is one of the main causes of calcification. In presence of lactic acid, as in cases of osteomalgia, this precipitation of calcium salts could not take place, and the action of the acid an the lecithin would liberate fatty acids, which are always present in such cases. The presence of relatively high proportions of magnesium salts under the same conditions arises from the fact that the solubilities of calcium and magnesium salts of fatty acids are practically the same in dilute solutions of lactic acid, whereas in normal ossification the conditions are not such as favor the precipitation of magnesium salts.

NEW REMEDIES.

Leifon.—Crude, watery borneol, obtained from Blumea balsamifera, said to be identical with Ngai camphor.

Medulladen.—Extract of spinal cord, used against gout.

Fiperovatine.—Alkaloid from Piper ovatum. Spastic.

Rubrol.—Solution of boric acid, thymol and some coal tar derivative. Injection in gonorrhea.

Stypticin. — $C_{12}H_{13}NO_3 + H_2O.HC_2$. A Hemostatic.

Zincohemol.—Zincated hemol. Antichloratic and antidiarrheic. Dose : 0.5 gm.—*Merk's Bulletin.*

Aminol.—Said to be an aqueous solution of a gas possessing antiseptic and deodorizing properties ; described as a colorless, slightly turbid liquid, possessing the odor of trimethylamine, reaction strongly alkaline to test paper, specific gr. at 17.5° C. 1.01.

Iodoformal. — A yellow powder having a strong odor of cumaino. Is insoluble in water and in ether, nearly soluble in boiling alcohol, melts at 128° C. Yields iodoform when acted upon by hydrochloric acid and iodine by the action of concentrated sulphuric acid.

Phenosuccine.—Produced by the action of succinic acid upon para-amidophenol ; it forms small colorless needles, which dissolve in 83 parts of water and melt at 155° C. Analgesic and antipyretic.

Sodium Phenosuccinate.—Obtained on heating succinamine with sodium hydroxide. Analgesic and antipyretic.

Theuenit.—A new food preservative, whose chief active constituent is said to be Sodium Bisulphite.

Trophenin.—Von Merrony describes it as a homologue of Phenacetine, obtained by heating paraphenetidin with hopionic acid. It melts at 120° C. and is soluble in about 2,000 parts of cold water. Its properties are antipyretic and antineuralgic. The dose as an antipyretic is from 0.3 to 0.6 (5 to 10 grains). To secure its analgesic action 1.0 (15 grains) doses, repeated 3 or 4 times in 24 hours, are given without fear of producing unplesant secondary effects.

THE Alumni Journal

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,
115-119 WEST 68th STEERT.

Vol. III. FEBRUARY, 1896. No. 2.

THE ALUMNI JOURNAL will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, ...	**One Dollar**
Single Copies, ...	**15 Cents.**

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
FRED. HOHENTHAL, 857 Third Avenue.

All communications relating to finances and business matter in general should be addressed to
THOS. E. DAVIES, 543 Third Avenue.

All communications relating to subscriptions should be addressed to
NELSON S. KIRK, 9 East 59th Street.

EDITOR.
FRED. HOHENTHAL, PH. G.

ASSISTANT EDITORS.
JOHN DELSON, PH. G.
K. C. MAHEGIN, PH. G.

ASSOCIATE EDITORS.
CHARLES RICE, PH. D.
CHARLES F. CHANDLER, PH. D., M. D., L.L.D., etc.
ARTHUR H. ELLIOTT, PH. D., F. C. S.
HENRY H. RUSBY, M. D.
VIRGIL COBLENTZ, A. M., PH. G., PH. D.

THE Alumni Association of N. Y. C. P, has held its first annual ball Wednesday, January 22d, at the Banquet Hall of Madison Square Garden. It will be remembered till the second one will be given. The anxiety as to whether or not it will be a success disappeared at the ball room as ether above some Bunson burners. It has been a great social success. Mother "Alma" had her own children, at least a great part of them, under her wings together for several hours. And who enjoyed it more, than the children? Why, it looked as if a banquet was given to each individual graduate. A greeting here, a hallo there, indeed, they went so far as to embrace each other (and this long before Nectar and Ambrosia had made their appearance).

Fellow graduates! Why not keep together a whole year around? What is the object of the Alumni Association, if not to keep the graduates in social contact? And who benefits by it? I hardly think it is the Association at large; more surely the individual members and then only when all keep together. With the steady growth of our College the Association must grow, verily, the one without the other seems to be a theory which would not work practically. Are we not proud that the New York College of Pharmacy occupies a building which is the finest pharmacy building in the Union?

Fellow graduates! Think about it and then ask yourself: Why should not the College be as proud of its Alumni, as the Alumni is of the College?

AMPLE sociability you have shown at the ball, then a nicer and more sober affair could not have taken place. Therefore, with the year 1895, drop the inactivity you have heretofore shown to our Alma and do take interest in the Association, for year after year the Association grows, and if each one should only interest himself just a little, the time cannot be far when the College will be as proud of the Alumni as we are *vice versa*. And this is not the only point that is to be gained. The Association could raise a voice then in Pharmaceutical affairs which not only will be heard but will also be respected. This is the main object. This is our aim. And to reach this end, how many graduates are working for this now? You can count them on the fingers of your own hands. Is it right? Should we allow just a few only to do the work for the whole Association? No. You want it not. All put your shoulders to the wheel and see how merrily it will go around. Every Wednesday evening there is a social gathering at our Alumni room, No. 33. The newest feature is the piano. It is also like a boy trying to win the affection of a girl, by giving her candy, telling her sweet words and what not, so the present officers of the Association offer all kinds of inducement, as they say, "to keep the boys together." Gentlemen, unlike girls, show your affection, if you have any, towards our Association; if not, say so, that we shall know it.

It is said that some manufacturers and wholesale dealers of this city, Chicago and other small towns, have united to take decided steps against cut rates of dry goods dealers and others. This kind of black draught has worked them up. Well, no wonder; they got a good dose of it, and they can thank all the ancient and modern gods if they get over the effects of it. Help them, any how. Have pity on this severe patient. It may do us some good, too.

The Cuban revolution affects the drug trade as far as sponges are concerned. Medium grade sponges, the most of which come from Cuba, are rare, the fisheries mostly having stopped. Belligerent rights ought to be granted to revolutionists, otherwise those who need cold sponge baths will be in the soup.

Boys, be ready for the lecture of Prof. H. A. Haubold next season. It will be as interesting as all the previous ones have been. You all know him, don't you?

A physician not a thousand miles from New York prescribes a new and unheard of organic drug — "Podophyllin muriate." Analyze it, please, ye organic chemists.

THE ALUMNI BALL.

One of the social events of the season (at least in pharmaceutical circles) was the First Annual Ball of the Alumni Association, which occurred on the night of January 22d last. After the overture had been played the grand march was led by Mr. Searles, and then the dances followed each other rapidly, while between them our graduates found time to greet each other and renew old acquaintances. In the wee small hours of the morning, when our appetites had waxed stronger, the supper march was taken up and we were led to that place from which no man or woman returneth hungry. During the supper and while the irrepressible spirits of the boys were for a time suppressed, speeches were made by President Stover and ex-President Graeser.

After supper the pleasure seekers adjourned to the ball room, where the dance went on merrily until it was time for the weary revellers to wend their way homeward.

Following is the extract of a pharmaceutical paper, which we reprint for the reason that it gives so good an account of the committees and the wholesalers' representatives:

O. J. Griffin, the genial and popular clerk of the college, was very much in evidence with the Ladies' Wheel Club of Flushing, the members of which took advantage of the proximity of the ball room to the Bicycle Exhibition to attend both. He was accompanied by Mrs. Griffin, who earned the distinction during the evening of being one of the best dancers on the floor. Miss Hepburn, daughter of the well known and respected pharmacist, John Hepburn of Flushing, was one of the charming wheel women of Mr. Griffin's party. The faculty of the college was ably represented by Professors Coblentz, Ferguson and Diekmann, and the share they took in the pleasure of the evening was thoroughly appreciated by every member of the association. Secretary Mason helped along things greatly by his presence, and none enjoyed the dancing more. The trustees of the college were represented by Reuben R. Smith, who was accompanied by Mrs. Smith. The absence of President Fairchild was much regretted. He was prevented from attending by the serious illness of his wife's father, Judge Tappan. A. C. Searles took an active part in the festivities, and much of the credit for the smooth way in which things ran during the evening is due to him. Fred. Hohenthal, the editor of THE ALUMNI JOURNAL, added greatly to his popularity by his efforts to make all feel at home and his services in introducing strangers.

The committees under whose direction the affair was conducted were as follows:

Floor Committee—Charles T. Cubit, chairman. H. C. Yager, Harry Heller, G. H. Carter, S. S. Shears.

Reception Committee—Herman A. Graeser, chairman; Frederick Hohenthal, Nelson S. Kirk, M. J. Coates, H. Jewett McKellar.

Press Committee—Wm. H. Ebbitt, chairman; A. Henning, J. Tannenbaum.

Arrangement Committee — Julius Tannenbaum, chairman; Wm. H. Ebbitt, Adolph Henning, Arthur C. Searles, John Oehler, Rudolph Gies, George Burger, Geo. C. Diekman, M. D., Ewen McIntyre, Wm. A. Hoburg, Jr., Thomas M. Davies, Eugene F. Lohr, Timothy B. Breen.

In addition to those mentioned above, the following is a partial list of those present at the ball: Carl Mittenzweig, Eugene Lohr, Francis Warner, Robert Cordner, C. W. Race, William Gregorius, F. Borggreve, P. H. C. Winkler, J. Horton Uhle, C. P. Freschbier, G. F. Burger, Arthur Worthington, W. H. Finkernagel, J. Delson, A. Mueller, R. Boenke.

Among the ladies present, mention must be made of Mrs. R. Gies, whose costume was much admired; Miss Speckler, Miss Prager, Miss Abendroth, Miss Fieberling, Miss Hoburg, Miss Estelle Boyer, Miss Lohr, Miss Mittenzweig, Miss W. Lotze, Miss Briggs, Miss Bollingham, Miss Barnett, Miss Vogel, Miss Ellsworth, Miss Coleman, Miss R. Fraser, Miss Gladhill, Miss Range, Miss Valerius, Miss Herold, Miss Leavens, Miss Fredericks, Miss Schall, Miss Borggreve, Miss Jacobs, Miss Kauffmann, Miss Bluemert, Miss Klein, Miss Worthmann, Miss Remington, Miss Ingersoll. The married ladies present included, among others: Mesdames Smith, Breen, Remington, Rogers, Hanck, Doherr, Hayward, Humphreys, Ottendorf, Warner, Tracy and Hohenthal.

Many well-known wholesale firms of the city contributed to the success of the gathering by the presence of their representatives, and in a few instances of members of the firms themselves. W. H. Scheiffelin & Co. were represented by W. H. Ebbitt, who was chairman of the Press Committee, and who contrived to make things exceedingly pleasant for the reporters. Fox, Fultz & Co. were represented by the head of the firm, Clarence Fox, and M. R. Thurlow; Parke, Davis & Co. were in evidence with Chas. E. Smith; Whitall, Tatum & Co. by Albert Tatum and W. W. Tamlyn; Johnson & Johnson, had a representative present in Mr. Rogers; Wm. R. Warner & Co. of Philadelphia and New York, could scarcely be overlooked with the beaming countenance of H. I. Yager, so much in evidence. The absence of Brent Good was made up for by the presence of his son Harry and Mr. Toy. Jas. Tufts of Boston and New York, was remembered by Mr. Ellsworth, his New York agent; Keasby & Mattison, by A. N. Cox; the Young Perfumery Co. by A. L. Brady; the Low Art Tile Company, by J. H. Sangston.

It was far into the morning hours before the dancers dispersed. The enjoyment of the evening was sustainad to the close, and many were the expressions of praise bestowed on the efficient committees which had charge of the general arrangements.

ALUMNI SOCIABLES.

THE Alumni Reception Committee take pleasure in announcing that until further notice their room will be open every Wednesday evening after 7.30 P. M. Programme to be announced in the JOURNAL. Graduates and students are respectfully invited to participate. One plank in our platform of hospitality is to give every guest a free rein.

For this month we have:

Feb. 5.—Smoker.

Feb. 12.—Lecture by Herman Heydt, Ph.B., LL.D., on "Five Minute Glimpses of Europe."

Feb. 19.—Reception.

Feb. 26.—Card party.

NELSON S. KIRK,
WILLIAM A. HOBURG, Jr.,
GEO. H. BURGER,
Committee.

SCIENTIFIC PARADOXES.

A druggist in the very act of using drugs, dispenses with them.

What becomes of all the meat in America? We eat what we can, and can what we can't.

Alumni Notes.

'93 NOTES.

The first annual ball of the Alumni Association was a success, the greatest success ever achieved by any pharmaceutical body. The Class was represented on all committees and have done their work nobly. We were represented by Mr. and Miss Lohr, Mr. and Miss Hoburg, Mr. Lawrence and lady, Stage brothers and ladies, Mr. Friese and lady, Mr. and Mrs. A. Kraemer, Mr. and Mrs. H. Heller. Mr. and Mrs. J. Tannenbaum, Mr. and Miss Mittenzweig, Mr. and Miss Amboss, Mr. and Miss Speckel. The following unattached gentlemen were also present: Chas. Cubit, Uhle, Bill Renswig, Carrol Daddirian and Ihmels. What a display of brain, beauty and wealth!

And so the ball passes into history as a grand success.

"Will you try our beef, iron and wine?" varied with "Will you try our celebrated coca wine?" repeated over and over again by a young lady in a Harlem dry goods store, is the latest in advertising drugs in department stores.

E. Spinnetti is conducting a pharmacy in Venezuela. 'Tis said that he is engaged to be married.

J. P. Colonel bought out his employer and is now the proprietor of a snug pharmacy at 3d Ave. near 110th St.

Mr. King dissolved partnership with R. Goldberg. His present address is wanted.

Did you put in your bids for bonds yet, boys?

Once again. The ball was a howling, roaring success, and don't you forget it.

J. Tannenbaum,
116 E. 116th St.

Beneath the soft glow of the incadescent bulbs; to the music of Eben's uncomparable band, the frou-frou of silken dresses, and the soft laughter of sweet female voices, the Alumni Association achieved its first grand victory on the field of social triumphs.

The first annual ball of the Association has proven a success far beyond our most sanguine expectations.

Such a renewal of old friendships; such a reunion of old class-mates, many of whom have not met since that night in '93, when we arose to receive our degree as the names of the successful ones were read by one whose voice has since been stilled by the dark messenger. The grim visitor has dealt lightly, so far as I know, with the boys of '93, but the rosy little god has been playing sad havoc amongst us, Tanny, Novotrey, Munson, Zwingley, Lunpfer, Kramer and Heller have all fallen victims to his fatal shafts, with many other counties to be heard from. Our class was well represented, from the "wilds" of Jersey came the ever beauteous "Billy" Renswig; from "Trolleytown, over the river," came jolly "Doctor" Fred Lawrence, and the cherubic Mittenschwing, also Frischbien, not he of '96, but his brother, who brought a large bundle of remembrances from "Otto."

The tall and willowy Uhle, the fresh and youthful brothers Stage, the dark and nihilistic Kramer, the gentle and poetic Lohr, the stout and steady Cubit, the young and trusting Ihmels, the *blase* Specker, the aggressive Tannenbaum and myself reported "present," as did also Miss Ingersoll who wrestled with the mysteries of pharmacy at our side during the junior year.

The discovery of Professor Coblentz, Dr. Dieckman and Professor Ferguson was the signal for many a repetition of the question, "What's the matter with Coblentz? (or Dieckman, or Ferguson?)" and great was the relief shown when the answer invariably came forth in a lusty shout of "He's all right," and a swarm of the boys surrounded our old, well beloved teachers for the rest of the night.

A great surprise to our guests was the beginning of the the festivities *on time.* After the orchestra had performed the overture to "Orpheo," which set the feet of the boys to moving, the military cadences of the grand march, dedicated to the Alumni by Professor Eben, was borne upon the air and then—oh ! what a galaxy of great stars of the Alumni Association moved out upon the floor, headed by our Vice-President, Mr. Searles, closely followed by Messrs. Henning, Hoburg, Hohenthal, Graeser, Ebbitt, Mason and many other shining lights of pharmacy.

Under the guidance of Mr. Cubit, the chairman of the floor committee, the long line of ladies and gentlemen marched, wheeled and countermarched, until at last filling the ballroom from side to side, they came down the room sixteen couples abreast, with firm and martial tread, and line unbroken.

Dance followed dance in rapid succession until a weakness fell upon us, which was prescribed for very successfully by Dr. Terhune in the supper room, to which we marched, headed by Mr. Cubit.

The viands surrendered unconditionally to the attack of the guards, and no quarter was shown.

The boys of '92, '93, '94, '95 and '96, gave evidence that they were present by venting their spirits in their various class yells.

Let it be said to the credit of '93 that we were distinctly "*in it.*"

When the cravings of the inner man had been appeased, and while we loitered over our coffee and cigars, Mr. Stover, our president, in response to a call from the assemblage, made a few brief and pointed remarks, which were enthusiastically received. He was followed by our popular ex-President, Mr. Graeser, who also covered himself with glory, then refreshed in mind and body, we returned to the ball room, and from then until the strains of "Home, Sweet Home" stole through the room, we kept up the worship of Terpsichore.

Where is Hohenthal? Did not you see Mr. Hohenthal was heard all over the ball and dining room. But Mr. Fred. Hohenthal had disappeared. The duty of his profession was rather cruel to him on this night, but he left his representatives, Mrs. Hohenthal and her sweet and amiable sister, Miss Emma Klein.

Farewells and good-byes resounded through the corridors, a few college yells, and then we separated; not one of us without the feeling that this has been indeed the entrance to a great and glorious epoch in the history of the Association and something to think and talk of until the second annual ball gives us new material for thought.

Ninety-three you have done well. Let us see you again at the summer outing with your sweethearts and wives.

Yours fraternally,
HAPPY HARRY, '93.

'94 NOTES.

THE Ball ; a grand success ; now for the Wednesday evening sociables. Read the programme and go by it. Nothing pleases the loyal '94's more than to see a large delegation present on an "open house night." A schedule will be found on another page. Can't you come? What's that? Certainly, we would be most pleased to have her come, too, on either a reception or lecture night.

LOST, strayed or stolen, Brater and a few others ; information concerning them would be appreciated by me.

MANY of us cannot spare the time or expense of a European trip. On Feb. 12th Dr. Heydt will give a 5 minute talk on the principal centers. Make an effort to hear him, it will be very interesting.

YOU know of something interesting, why not postalize it on or before the 20th, so that it will appear in the following issue?

FRANKLIN G. HILLS is again in town. He is with Knapp, 362 Hudson st.

EX-SECRETARY LINNIG has resigned his position in Brooklyn and is now with Otto Seifert, at 84th st, and East End ave., this city. From his window Blackwell's Island may be easily seen. We hope you will not have occasion to be drawn any nearer this famous institution.

Freddie in an interview with a Journal reporter the following conversation occurred:

Reporter—So you have moved back to New York, eh?

Freddie—Not back, old man, but forward. Moving to New York from anywhere is a move forward, not backward.

I guess, he's right.

To a true sense of the word, no '94 man has shown more business tact and enterprise than Geo. C. Frölich. It seems but a short time since I announced his departure into business in Mamaroneck, N. Y., and subsequent marriage. To-day we find him studying the therapeutic value of Opii Camph, and other soothing cordials, so familiar to papas, with Miss Frölich as a subject. Literature has also claimed him, as he is the editor of a bright little social paper called *Orienta*, in the ads of which, testimonial of his various pharmaceutical products are conspicuously displayed.

The 1895 mileage record of the N. Y. C. P. cyclers was as follows:

M. A. Auerbach, '94, 2300.
N. S. Kirk, '94, 2140.
G. E. Ruckert, '98, 2095.
C. W. Race, '94, 2001.
L. B. Wade, '94, 1700.

The club promises to do some interesting work this season with such men as Hoburg, '93, Clarke, Born, Dawson, Simrell, Drs. Krueder and Wurthmann, '94.

Burger will make an excellent Alumni reporter. We hope he will receive the co-operation of every Alumnus.

Seldom has such enthusiasm been manifested in pharmaceutical ranks as that displayed at the ball. Our Faculty was represented by Profs. Coblentz, Dieckman and Ferguson, while the college's appreciation was made evident by the presence of Secretary Mason, Messrs. Hohenthal, Breen, Ebbitt and others. And what a grand time we did have. Old Sages are shaking their heads, and saying, "I told you so." For it has been a long needed affair which simply needed pushing, but there was no one there to push, until '93 and '94 joined forces.

Class Pins—I am about to order some pins; if you need one, kindly send in your order at once.

On account of sickness, Louis W. Schultze has been obliged to resign his position with F. A. Gundlach, 106th street and Columbus ave.

Fred. Trau, is quite a skater, ice, of course During the January cold snap, he was discovered by a Journal reporter on the Central Park pond. In a short space of time we were informed that he is with G. Kleinman, 78th street and Park avenue.

Nelson S. Kirk, 9 E. 59th St.

'95 NOTES.

I am sorry to say that personal matters prevented me from being present at Dr. Jelliffe's lecture on January 8th; although it is a poor way to start as a reporter, I promise not to be guilty of the same offense at the next lecture. Dr. Jelliffe's lecture was a very entertaining and instructive one, giving the more important characteristics which distinguish the edible from the poisonous mushrooms. The lecture was handsomely illustrated with colored lantern slides, many of them having been executed by the genial doctor himself. The only members of our class present were Dosh and Manville.

The Alumni Ball, which was held on the night of January 22d (and the morning of the 23d for those that stayed), proved to be a very successful affair. I know, for one, that I never enjoyed a ball as much as I did the Alumni's. Everybody who was somebody seemed to enjoy it, and a circumstance which made it much more pleasant is that everyone knew some one else. I expected to see more of the boys up, but could only count ten on the floor; but even this was a good showing, for I was told that about seventy-five per cent. of our class are not in town. Those present were: Cordner, Dauscha, De Soto, Gies (and wife), Hensel, Jorgenson, Mueller, Steinhuer, Walter and myself. Few as we were, I believe that the other classes will agree with us in saying that we made as much noise as any of them. During supper our headquarters were established by pinning one of our class flags against the pillars of the Café, around which our class cry was given, and given with such energy that the nearest ladies had to hold their hands to their ears for fear of being deafened. I hope that at the next ball I will be able to give you a better account of the class in regard to attendance. I must not forget to mention the fact that Miss Ingersoll, who attended the chemistry lectures during our junior year, was also seen at the ball. Professors Coblentz and Ferguson and Mr. Diekman of the Faculty were present. Schuyler was there in all his glory, and after supper the boys of the different classes got around him calling for a speech.

I hear that the Post-Graduates have organized a Bowling Club, and that the members are having fun with Gies and Walter, who are rivals for the championship thereof.

Woell is at Wohlfarth's Pharmacy, 110th street and 3d avenue. Schmelz and Koehler must have been making a round of the town on the day following the Alumni Ball, for they came in to see me, walking arm-in-arm, about 6:30 p. m., and stayed but a few minutes.

Boys, don't forget to attend the next Alumni lecture on February 12th. to be delivered by H. A. Heydt, Ph.B., L.L.B., on "Five Minute Glimpses of Europe." Judging by the title, the lecture will be a very entertaining one.

Rud. Boenke, Ph.G.
437 East 87th St., New York.

Senior Class Notes.

'96 CLASS NOTES.

"Benzol, Phenol, Thymol, Tar,
Euginol, Carbinol, Rah! Rah! Rah!
Salix, Radix, Rig—Giger Rix!
N. Y. C. P. '96!

Above is the second edition of our "war cry." Our class is the happy possessor of four; our criers—oh, Mama!

Mr. W. Lee Knight, of the Class of '95, made a call on some of his '96 friends recently. Mr. Knight was one of the most studious members of his class and is now reaping the just reward of his labors, holding a desirable position behind the counters of a well known firm at Haverstraw, N. Y.

Our brother correspondents will find Gifford at Watertown, N. Y., and undoubtedly will also find him at Carnegie Hall at our commencement exercises. We hear that he has no more use for the "girl wanted" button.

It has been lately discovered by one of our students that brimstone is identical to sulphate of calcium. Another astonishing fact was made known that lard was a fat obtained from bulls and steers.

At the Materia Medica examination which was held on January 6th, Louis Protzmann and Mr. Snappenberg stood at the head of Section 2. Mr. Frank H. Finley takes the lead in practical work in the pharmaceutical laboratory. No student has a perfect rating.

We have heard nothing further of Messrs. E. R. Squibbs and Sons, and we take it for granted that our letter did much in the way of soothing the irritation. Our reply was delayed in order that we could thoroughly investigate the grievance and arrive at the facts stated in the communication. We endeavored and finally succeeded in being as decorous as possible in the tour through the laboratories. Certainly, Messrs. S. & S. can appreciate the fact that our class, or similar classes, are not characterized by manifest lethargy or inactivity. 'Tis true that the horn may have added to the enthusiasm of the occasion but we have not the slightest doubt but that the possessor, yielding to the predominating good feeling, desired to speak louder than words in his appreciation and praise of the distinguished Squibbs' laboratories.

If you have an idea our class is cutting no ice, purchase a copy of the New York "Times," of December 31.

Quite a celebration of fireworks in the pharmaceutical laboratory on the day of manufacturing the gauze. Several explosions occurred through none of a serious nature.

At last our glee club committee has succeeded in gathering together a few of our boys who are endeavoring, even at the eleventh hour, to make the club a success. The enthusiasm shown at the class meeting at the opening of the senior year predicted success in any undertaking, but has proved to be more or less of a failure. The flag committee which promised to present the class with four designs has proved unsuccessful. The Pin Committee crippled by the voice of the class has been unable to obtain an estimate as to the cost of the pin chosen. Let it be hoped that the class meetings have a full attendance and the important duties of each member be rendered with enthusiasm.

We wish to extend thanks to the Alumni Association for the complimentary tickets presented. A majority of our boys will undoubtedly represent the '96 class, and without doubt, the occasion will prove of valuable social interest.

Chas. Wetmore Smith,
Rep. Sect. 2.

The *Western Druggist* has an article which is headed "Cycle in Drug Stores." He states that bicycles are the natural companion to the soda fountain. He asks whether the average drug stores outside the larger cities are adapted to carry as a side line a stock of bicycles or the accessories, as lamps, oils, saddles, pumps, cements, etc., or both. The article ends: "These are questions in which thousands of druggists are at present much interested, and replies, based on experience or special investigation, would be of great value." Baby carriages would be more profitable and just as appropriate.

A quorum of our older pharmacists think it is never too late to learn, and congregate once a week at Goerwitz' Beer Halle to discuss the merits of the amber liquid, and at the same time, under instructions of a son of sunny Italy, try to master his language. Possibly after they have enveloped several kilos of cerevesea Italian comes quite natural and they can speak it without an effort.

Their trusting spouses forgive their staying out late for the sake of science.

Poor deluded angels—bless them.

SYNONYMS.

Bismuth oxyiodogallate—Airol.
Flurol—Sodium Fluoride.
Salipyrazoline—Salipyrine.
Traumatol—Sodocresol.

OFFICERS AND COMMITTEES

OF THE

ALUMNI ASSOCIATION

FOR 1895–6.

President :

ALFRED STOVER.

Vice-Presidents :

A. C. SEARLES. DUDLEY T. LARIMORE.
OTTO HENSEL.

Treasurer :

ADOLPH HENNING, 68 William Street, New York.

Secretary :

WM. A. HOBURG, Jr., 115 W. 68th Street, New York.

Registrar :

K. C. MAHEGIN.

Executive Board :

To Serve One Year	FRED. HOHENTHAL. HENRY KREUDER.
To Serve Two Years	WINFIELD JOHNSON. NELSON S. KIRK.
To Serve Three Years . . .	T. B. BREEN. H. A. HEROLD.

Delegates to the Annual Meeting of the American Pharmaceutical Association :

CHARLES HOLZHAUER.
E. W. RUNYON. GEO. W. REED, Jr.
LEWIS BLUMAUER. OTTO C. B. GROM.

Committees :

On Papers and Queries :

HERMAN GRAESER. JOHN OEHLER.
GEO. C. DIEKMAN.

On Publication :

K. C. MAHEGIN. WM. A. HOBURG, Jr.
ADOLPH HENNING.

Reception :

NELSON S. KIRK. WM. A. HOBURG, Jr.
GEO. H. BURGER.

WHAT NEXT.

BY C. H. PATRICK.

Now that poets have exhausted,
All their wit on "Trilby" fair,
And the people are disgusted
With the style of Trilby air,
You will wonder if her phœnix
Will again in distant years,
Rise and climb to novel's zenith,
Filling maidens eyes with tears.

Or, perhaps you still may wonder,
If she has a brother fair?
Who on men will shed a luster,
In our next century scare.
And the husband's all sit reading,
Of the hero's mighty charge,
Heedless of his good wife's threatenings,
While the babies run at large.

And perhaps Grover may wonder,
In his silver bloomers new,
Will people forget his blunder,
In the recent tariff stew?
And elect him for a third term,
To reign our people just,
While he goes out pigeon hunting,
And the old flag trails in dust.

Or McKane may dream of "Coney,"
And the pull that brought him fame,
But when he wakes, oh, how funny,
To behold that ball and chain.
And to hear the merry jingle,
Of his comrades hustling out,
Waiting on him for to mingle,
As the guard yells "all file out."

So we are ever kept guessing,
Of the future's hidden book,
Of the rapid transit scheming,
And how big Broadway will look.
Who will be Parkhurst's next victim?
What will be Croker's next text,
Will New York and Brooklyn mix in,
What on earth will we have next?

RULES FOR DOSES.

Dr. Griffith gives the following as the best scheme known for ascertaining the doses for children. It obviates all guessing at weight, etc,, so objectionable to other rules :

Adult	1
18 years	3–4
12 years	2–3
8 to 10 years	1–2
6 years	1–3
4 years	1–4
3 years	1–5
2 years	1–7
1 year	1–10
9 months	1–15
6 months	1–20
3 months	1–30

AMERICAN PHARMACIES.

The following is part of an article which was printed in one of our daily papers not long ago. It is an article supposed to be written by a foreigner, after a visit to this country.

"A few words must really be given to one order of shops so different from our own ; I allude to the drug stores. With us, this business is a sort of mystery ; the personage who dispenses drugs is scarcely engaged in a pursuit merely commercial ; he makes display of his diplomas, and officiates as one dedicated to a cult. Not so in the United States, where the drug store is an avenue for the dispersion of flowers, cigars, postage stamps and refreshing drinks. The proprietor of one drug store out West is also Postmaster and cuts hair. I must be permitted to quote our lively countryman, M. de Guerville :

" 'Landed in New York,' says he, 'my friend, William P., whom I had known in Paris, took me in hand, and undertook to show me New York. After a breakfast at Delmonico's Sunday morning, the American 'Bignon,' we set out to explore Central Park. "That rose in your buttonhole is a beauty, William," said I.

" ' "Hang it!" he answered, "You must have one, too. There ought to be a drug store hereabouts?', and he looked around.

" ' "What do we want of a drug store?" said I.

" ' "To get you a boutonniere," said he; and sure enough, he descried a drug store and insisted on decorating me with a beautiful flower. As we were returning from the Park later—it was July, and grilling—

" ' "Aren't you thirsty?" asked William.

" ' I professed my willingness to accept refreshment.

" ' "There ought to be a drug store hereabouts," he answered, and took me into one. They gave us a mixture of ice cream and soda water which prickled the palate, the throat and all the way down, and was, in short, abominable. After we had dinner at the close of the day we again strolled up Broad way.

" ' "Let us smoke," said William.

" ' "Content," said I, and he added :

" ' "There ought to be a drug store hereabouts."

" 'I was paralyzed, but we discovered a drug store and there we procured cigars. Returning toward our hotel, I asked a direction to the Post Office.

"' "That's of no use," answered William; "here are letter boxes on the corners, and the carriers empty them before you could reach the Post Office."

"' "But I have no stamps," I urged.

"' "That's soon settled. There ought to be a drug store hereabouts"; and entering the first one I procured postage stamps and mailed the letters in my pocket.'

"Thus far speaks M. de Guerville. To his experiences let me add my own. In Boston I was under the charge of a charming American, Miss Alice W. We had been walking some time, and I suggested something to eat. She assented, and I looked about for a restaurant.

"'We needn't find a restaurant,' she explained; 'there must be a drug store hereabouts,' and actually, at the next corner of Tremont street, in an enormous shop, we got some very good cakes. A little later I felt that I must return to my hotel, in order to write a letter to New York, making arrangements for my Western tour.

"'That is quite unnecessary,' said Miss Alice. 'There must be a drug store hereabouts.' And in the nearest drug store I was able to buy the needful stationery, write my letter, get my stamp and post my letter. In short, I pronounce the American drug store the special Providence of the visiting foreigner." [Yet neither of these pilgrims seems to have discovered the drug store "Directory."]

◆

THE AUSTRALIAN DRUG CLERK.

The Australian chemist, says the *Chemist and Druggist of Australasia*, has the weakness of his countrymen, and, as the boy is father to the man, the patient apprentice may serve as an illustration. In the winter he is patient. He has decided that the busy time is over, that there will be no "biz" doing for the next few months and that he need not even bother about polishing up the glassware, since the flies have given up working for the season also. He lays himself out, therefore, to prolong any work he may be engaged in by asking questions, more or less relevant, concerning the same. If he is engaged in dusting a bottle, he gazes at its spotless surface and asks, "Where do flies go to in winter?" or "If flies have their use how is it there is no use for them now?" A stranger would try to snub him, a familiar would know that it would be as easy to snub the prince of interviewers as an Australian youth. "He looks innocent enough," said a magistrate who was asked to commit a boy of ten for insubordination. "Yes," was the reply, "he does now, but you should see him when he's roused."

ON A CUSTOM OF MANUFACTURERS.

Besides, what can be done when the apprentice, to whom the chemist has sworn to impart a full and complete knowledge of his business, pauses in the act of weighing up quinine to ask if it would alter the chemical composition of this drug to pack it in smaller compass? And when (still pausing) he goes on to calculate that thousands of pounds must be wasted annually by the conservative Britisher, who sends out quinine and tannin, and benzoic acid and the like in bottles which could be made to hold six times as much, and thus, inferentially, affirms the common sense of the colonial and the manufacturers' want of it, who would be inclined rather to admire his attention to practical details than to censure his abstraction. Neither, on the other hand, can it be asserted that his remarks are altogether wanting in sense when he grumbles at the slowness of a suppository machine that will only turn out one at a time, or ventures to think that ready-made pills are the most elegant. If, in short, he "works" under protest, and seems to protest too much, the master is rarely in a position to chide with consistency, for does not he himself feel the winter to be a season of lazy discontent, when the only thing that can be done with energy is to discuss (or cuss) the state of the roads in the country, or "those trams" in town? But when the glorious summer approaches quite another picture is presented, and a very different side of the national character displayed. The people then are not deliberately preparing for hard times and helping to manufacture them by their preparations. The dust is with us and sore eyes; the drains and fevers; the heat and liver and stomach complaints; the thirst and chills, etc. Every one is liable to be sick, no one can afford to be sick in "the busy season," and every one has money, more or less. The chemist, as a natural consequence, is kept busy early and late, and is able to bear all attendant discomforts with the utmost cheerfulness. And how does the apprentice behave in these days?

THE APPRENTICE IN FLY TIME.

Let us look in at Mr. Blank's shop in a country town between 10 and 11 A. M. on a January day when the thermometer is at 95 degrees in the shade already and rising rapidly. There are several people in the shop who are anxious to get home before it gets too hot. The apprentice is cleaning mirrors with the rapidity which is requisite when the water dries on the glass almost as soon as applied. A customer remarks that the flies gave him a lot of work. "Yes," he assents without pausing, "they do. They cause blight, poison wounds, spread disease germs, sell fly papers and insect powders; don't know what we should do without them." It was not exactly what the customer meant, but he has no time to explain before the duster is laid aside and the youth sets to work on a batch of pills. "Will these do; Mr. Blank?" he says in a few minutes (he never says "sir," by the way, except to his inferiors). The pills are "passed," and he lends a hand at the counter, serves three or four customers, gets off "our own" on them with the skill and assurance of a veteran, and then is asked for "some violent powder for baby what's shaved under the arms:" He is young enough to laugh at this, and Mr. B tells him sternly to finish off some powders, while he inquires what quality of violent powders she wants, with a diplomatic emphasize on the N which not only puts an end to the "lady's" resentment, but seals her as his customer for life.

MAKING SUPPOSITORIES IN HOT WEATHER

The mail comes in and Mr. B learn. that a drug he had ordered is out of stocks The apprentice suggests that he should run down to "the opposition" for some before they know about the scarcity. He does so, gets half of what they have, and returns perspiring and chuckling, to find a new difficulty arisen. There is no ice to be got in town," says Mr. B, "and how on earth does that idot expect we are going to make up these suppositories with the thermometer about 150 degrees in the shade?" (We mentioned that it was rising.) Some shavings of theobroma on the scales melting gradually, give point to the query. "I can do them outside," the apprentice says, and thinking he means the cellar, Mr. B weighs up the ingredients, hands them over to his aide, and attends to other work. In a little while our friend turns up smiling with six perfect cones and—wet hair. "Great Galen!" exclaims the master, "did you make them under the shower?" "I did," replies the ingenious one, "and I don't think its a bad idea, you see you cool yourself and the stuff at the same time." There is no gainsaying this, and as the hour is about up we will leave the subject, cheerfully looking forward to ten hours more of work, which could not be properly accomplished if the energy and resource both of himself and his master were not practically inexhaustible.

It is no exaggeration to say of the class of natives of which Mr. B and his apprentice are the type, that there are few things they will do if they see no necessity for doing them, and few things they will not do (and do well) when the necessity arises. Like the steeds of the Arabs they will only walk or gallop, but it may well be that their tendency to walk when opportunity offers provides a reserve force for the galloping, and may enable them to get more enjoyment out of life, and yet to accomplish as much as is done by the constant plodding of the Britisher, or the ceaseless energy of the American. —*Amer. Drug. & Pharm. Record.*

THE WONDERS OF PHOTOGRAPHY.

Electricity and photography are the two fields in which everything is to be expected and nothing astonishes. Where the two are combined we have indeed to expect marvels. The kinetoscope, tho' in a sense little more than a toy, is an evidence of the wonders to be expected from electricity and photography working together, and a still more remarkable result than that shown in the kinetoscope has been accomplished by Professor Rontgen, of the University of Wurzburg, Germany.

So far the report rests upon newspaper authority, but the original reports have been so generally confirmed as to lead to their acceptance as being correct. Moreover, the experiments have been repeated with brilliant success at the London Camera Club. The negatives are produced by placing the object to be photographed between a Crooke tube and a wooden plate holder containing an ordinary sensitive plate, exciting the tube by means of a secondary induced current of electricity for from 4 to 20 minutes and then developing the negative in the usual manner. The slide is *not* removed from the plate holder.

A negative thus made from the living hand shows only the bones of the hand, while the negative of a leather purse containing coins showed only the coins and the metallic clasp. This remarkable result is accounted for on the theory that the strange medium which produces images of hidden objects on a photograph plate is not light at all. It is equally incorrect to describe it as electricity. It is some force or influence produced by Crooke's tube when excited in a peculiar manner, but it is not the visible light or glow which comes from the tube. That visible light has the same qualities as an ordinary light. The invisible new medium has not the same qualities. For instance, it will not penetrate clear glass. It will penetrate ground glass, though more feebly than wood or other organic matter. Aluminum is far more transparent than glass. Even copper is less opaque than glass.

Mr. Swinton, the London electrical engineer, exhibited a large collection o these strange photographs at the Camera Club. He employed a half horse-power electric current, and passing it through an induction coil, loaded ten Leyden jars. The discharge from them was passed through a second induction coil by a secondary system by which Crooke's tube was excited. He said that he had only succeeded in this way, and had failed with Crooke's tubes excited by an ordinary induction coil.

An almost equally remarkable discovery is reported by W. Inglis Rogers, in the *Amateur Photographer* of November 22. Mr. Rogers asserts that he has been able to photograph the retinal image of an object. His first experiment was done alone; the second was in the presence of three other men, one being a physician. A small object, in one case a shilling, in the other a postage stamp, was placed in good light before the writer, who gazed fixedly at it for one minute; the light was then shut off, and the test object replaced by a rapid photographic plate, at which the author looked steadily for a period (in the second experiment) of 20 minutes, concentrating his thoughts meanwhile wholly upon the image of the object he had been previously fixing. During the substitution of the plate for the last object, the observer's eyes were closed. The plate was then developed in the ordinary way, and reproductions of the psychograms are given in the journal. In the first case, in which a shilling was the test object, the print shows an ill defined circle on the plate, and in the second, when a postage stamp was employed (and a larger plate used than before), "two impressions were obtained, one from each eye, and at respectively the same distance from each other as the eyes." These impressions (in the reproduction), according to the *British Medical Journal*, bear a distinct resemblance to a postage stamp. These latter experiments, or similar experiments, can be carried out by any one with a little assistance.—*Amer. Drug & Pharm. Record.*

HOW CAMPHOR IS CULTIVATED IN FORMOSA.

One of the principle products of the territory which has come under Japanese administration as a result of the war with China is camphor. In the *Scottish Geographical Magazine*, Mr. John Dodd, writing on Formosa, tells us how this product was cultivated.

" Small shanties are scattered over the hills where the camphor trees grow, and in all directions the clearing of the woods is going on at a rapid rate. Some trees are cut up for camphor making, others are sawn into planks and knees for the building of junks and boats of all descriptions. On the hill sides are build distilleries consisting of oblong shaped structures, principally of mud bricks, and about 10 to 12 feet long, 6 feet broad and 4 feet high. On each side are 5 to 10 fire holes about a foot apart and the same distance above the ground. On each fire hole is placed an earthen pot full of water, and above it a cylindrical tube, about a foot in diameter and 2 feet high, passes up through the structure and appears above it. The tube is capped by a large inverted jar, with a packing of damp hemp between the jar and cylinder to prevent the escape of steam. The cylinder is filled with chips of wood about the size of the little finger, which rest on a perforated lid covering the jar of water, so that when the steam rises it passes up to the inverted jar, or condenser, absorbing certain resinous matter from the wood on its way. While distillation is going on an essential oil is produced and is found mixed with the water on the inside of the jar. When the jar is removed the beady drops solidify, crystallization commences, and camphor in a crude form, looking like newly formed snow, is detached by the hand, placed in basked lined with plantain leaves, and hurried off to the nearest border town for sale.

"With regard to camphor, as in other commercial matters, the Chinese government has acted very foolishly. For over 30 years, to my knowledge, there has been a constant demand for camphor and yet the administration has done nothing to prevent the reckless waste of the forests and taken no steps to provide for the reafforestation of uninhabited tracts unless for cultivation. True, as far as I have explored the mountains of the interior, camphor trees seem to be exceedingly numerous and, there is at present no fear that the supply will run short for many years to come. But the increased demand for camphor in these days of smokeless powder may hasten the destruction of the trees, and therefore it is to be hoped that the Japanese will assure the supply in the future by planting saplings on waste lands. I planted a lot in my garden in 1869, and when I left in 1890 there were trees 30 to 40 feet high and upward. From this experiment I conclude that trees 50 years old would be large enough for all ordinary purposes to which the timber is applied."—*Amer. Drug. and Pharm. Record.*

THE PRACTICAL USE OF OZONE.

When electric sparks are passed through the air a peculiar odor is soon noticed. This odor arises from the presence of ozone, which is produced from the oxygen of the air when the latter is subjected to the action of electricity.

Ozone is one of the most powerful oxidizing agents known, and, although no method for producing has been discovered which is as practical as we would like to have it, ozone has still achieved some practical successes. It has been used in the artificial ageing of brandy, sweet and heavy wines and liquors. It improves the aroma of coffee and renders uninjurious the disagreeable odors of the coffee beans. It improves tobacco. One of the most interesting and recent uses of ozone (*Brooklyn Manufacturer*) is to improve the resonance of wood, and to artificially age wood.

The wood is placed from 12 to 24 hours in a closed and warmed room into which ozonized air is conducted. In this way the wood hardened and becomes resistant to exposure, and also more resonant. The operation of thickening linseed oil in the manufacture of linoleum, which is a process usually requiring several months, can be finished in a few days by the use of ozone. In bleaching linen ozone is very effective and requires only one-third as much time as the grass bleach; which is, of course dependent on the weather and the time of year. One of the recent technical uses of ozone is in the production of pure derivatives of starch, as, for instance, soluble starch, dextrine and "crystal gum," the ozone assisting in the removal of all substances which give a dark color, an odor and disagreeable taste. In cheap production ozone offers an attractive problem to electricians.—*Amer. Drug. and Pharm. Record.*

LIQUID AIR.

At a recent meeting of the Chemical Society, Professor Dewar exhibited a portable apparatus for making liquid air or oxygen, and showed that by attaching a silver flask, containing about a liter of liquid air, to a pump, within twenty minutes they could reduce it to a solid.

He then referred to experiments made in order to determine the corrected density of oxygen. Following the classical researches of Joule and Playfair on the coefficient of expansion, he had made use of liquid air for taking the specific gravity of a number of bodies. A silver ball was immersed in a flask of liquid air. On withdrawing it immediately it was observed to be quite dry, owing to the liquid around it assuming the spheroidal state. On replacing it in the liquid, after some minutes a distinct hissing sound was heard which indicated the point where the ball had reached the same temperature as the liquid. In this manner the figures for bismuth (1.3), platinum (1.386) and a number of others had been obtained. These lead to the calculation that oxygen had a constant density of 1.367.

An interesting lecture experiment was next shown. A sealed flask containing the vapor of bromine was exhibited, and the top was rubbed slightly with a cotton wool mop dipped in liquid air. Gradually the red color faded away as the temperature in the flask was reduced by the evaporation of the liquid air. This was explained as due to the liquefaction and subsequent solidification of bromine, which, in the solid state, forms beautiful red crystals. Solidified nitric oxide looks like copper sulphate.

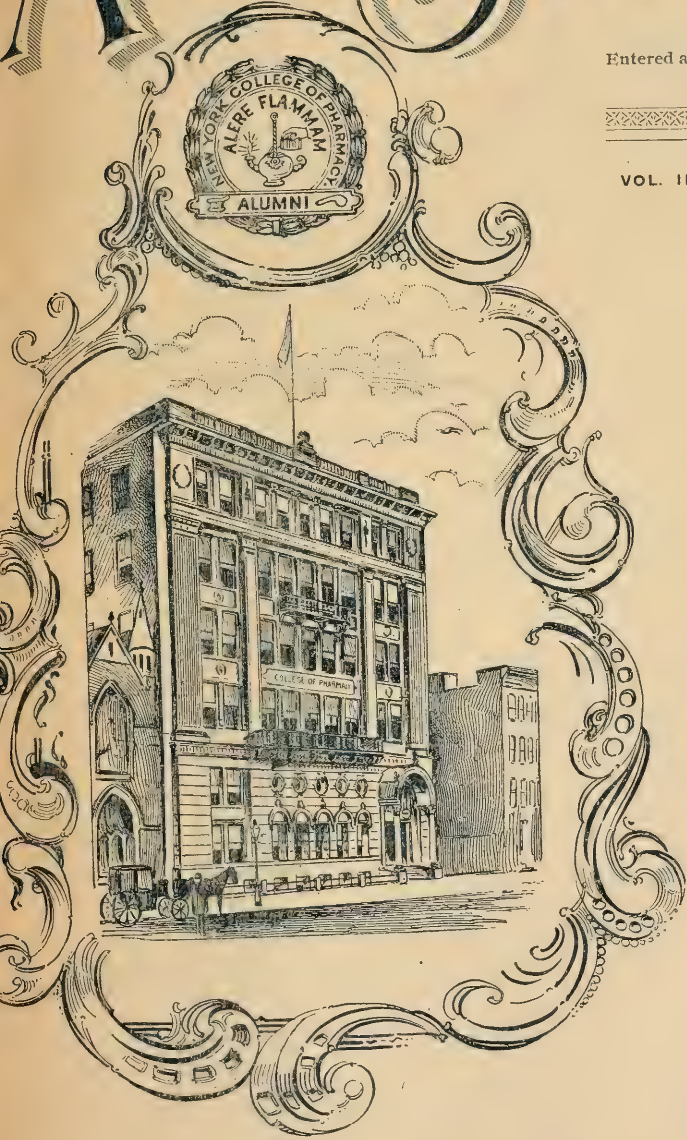
Finally Professor Dewar pointed out some of the difficulties in the way of obtaining liquid hydrogen. Air was cheap enough, but the case was different with pure hydrogen. Then again, a very large amount was needed, owing to its excessive lightness, and, said the professor, "The expense is awful." It was quite evident that he still hoped to get over these difficulties.—*Amer. Drug and Pharm. Record.*

THE Alumni Journal

Entered at the New York Post Office as second
class matter.

VOL. III. NO. 3.

March, 1896.



Contents:

FIVE MINUTE GLIMPSES OF EUROPE, 49
By HERMAN A. HEYDT. Ph. B., L.L. B.

THE VARIOUS SYNTHETIC PROCESSES FOR VANILLIN, ... 56
By Prof. VIRGIL COBLENTZ.

EDITORIAL, ... 59

BOOK REVIEWS, ... 60
By Prof. H. H. RUSBY.

THE MOST RECENT WORK, . 63

ALUMNI COLUMN, ... 65

ALUMNI NOTES, ... 66

SENIOR CLASS NOTES, . . 68

POISONING BY FLUTES, . . 69

A "STATUTORY" CHEMIST, . 70

POSITION DURING SLEEP. . 70

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . . .

$600.00

IN PRIZES.

We announce herewith a Series of Prizes to Physicians for the best original article on the "CLINICAL VALUE OF ANTISEPTICS BOTH INTERNAL AND EXTERNAL."

First Prize—An original oil painting entitled "Wedded to Science," valued at $250.00 or its equivalent in cash.

2d Prize	$150.00	in cash.
3d "	75.00	"
4th "	50.00	"
5th "	25.00	"

5 additional prizes of $10.00 in cash.

Dr. Frank P. Foster, Editor of the "N. Y. Medical Journal," has kindly consented to assume all responsibility in judging the merits of the various papers submitted. The papers are to be sent sealed to us and will be delivered intact to Dr. Foster.

For particulars and conditions, address,

THE
PALISADE MFG. CO.
YONKERS, N. Y.

The conditions do not require any mention of or reference to BOROLYPTOL. The articles will be judged solely by their intrinsic value to literature and medical science.

OLDEST STAND ON BROADWAY.
TRADE MARK.
TRINITY CHURCH 1697
MILHAU'S PHARMACY
BALTIMORE 1813.
NEW YORK 1830.
AT 183 BROADWAY.
ST. PAUL'S CHAPEL. 1764
CORTLANDT ST
DEY ST

THE "ANIMAL EXTRACT CO.'S"

CARDINE, heart extract, for Heart troubles

CEREBRINE, brain extract for Epilepsy, Brain, Nerves, Hysteria, etc.

MEDULLINE, extract of Spinal Cord, for Locomotor-Ataxia, etc.

MUSCULINE, for Muscular Rheumatism,

OVARINE, for Diseases of Women, Sterility, Nervous Prostration, etc.

TESTINE, for Nervous Debility, Impairment, Impotency Exhaustion, etc.

THYROIDINE, for Obesity, Goitre, Skin Diseases, Myxoedema, etc.

☞ *Positively guaranteed as the only brand always strictly according to Dr. Hammond's published formulas. $100 forfeit if not.*

Dr. DECLAT'S PHENIC PREPARATIONS, for Cancer, Consumption and all Fevers.

Medals awarded, Paris, Lyons, &c. for Phenic Acid and Compounds.

J MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER
183 Broadway, - - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, March, 1896. No. 3.

LIBRARY
NEW YORK
BOTANICAL
GARDEN.

FIVE MINUTE GLIMPSES OF EUROPE.

By HERMAN A. HEYDT, Ph. B., L. L. B.

Mr. President, Members of the Alumni Association and Friends:—

When your committee honored me some time ago with the request to address you this evening, I was in quite a quandary what to talk about. I know it would be quite apropos of these troublous times to talk of civil service reform, the Venezulean question, of the Tariff bill, etc., but knowing that for the past few years your minds have been troubled with Materia Medica, SO_3 and the like, I deemed it advisable to forget scientific subjects for the evening and to discuss personal reminiscenses.

But then came the second quandry. One thousand and eighty incidents loomed up before me, and if I allotted five minutes to each, it would be 5400 minutes or 3¾ days. I had a serious consultation with chairman and he informed me the human system was so constructed that it could not withstand poor oratory longer than one hour. And he begged me not to talk to you longer than one hour. So, bearing in mind the story of the church-member, who upon being asked why he always sleeps during the sermon, said, I am *conveyed* to the land of Nod by the parson's *train* of thought, I will ask you to go with me to Europe and we will take five minute peeps at some of the interesting things we find there. As I said before, the one great drawback to this subject is the quandary it puts me in as to where to go and what to see, for there are so many, many things which we have not and which are certainly worthy of our notice. It would be infinitely easier for me to describe the tour of the Continent than to jump from one place to another, but I understand your committee is very particular and insistent, therefore I will confine myself strictly to my subject, "Five Minute Glimpses of Europe." Under this head I will attempt to give you some idea of the Whitechapel District of London, the dykes and lowlands of Holland, the concert gardens of Germany, the canals of Venice, the Colosseum of Rome, the Leaning Tower of Pisa, the Firth of Firth Bridge, Scotland, the Giants' Causeway and the Blarney Stone of Ireland. You might well ask, why don't I describe St. Paul's or St. Peter's, or Paris, or the various things of note ; but I answer, I cannot describe everything to-night, hence have selected those subjects which I considered of especial interest.

It was in June, 1892, that I set foot in England—and a splendid country I found it. The people are polite, hospitable and courteous, but have the abominable habit of wearing little skull caps perched on the back of their heads and of constantly smoking pipes. But without further description, in four days I was in London—London, the wonderful, London, the immeasureable, London, the largest city of the world. And I was not disappointed, I was perched in the 26th floor of the hotel—at least so it seemed to me, and to this day I have not found out whether it was an inadvertence or the lofty British sense of respect to a foreigner. At any rate the room was lofty. It was a Saturday night and high up as I was, I could hear a constant humming and buzzing from the street below, which plainly told me I was surely in the Metropolis of the world.

I lost no time in paying my respects to the police authorities at Bow street. Bow street is as famous to us as our Bowery or Wall street is to them, and told the officials that I desired to make a tour of Whitechapel under police protection. I was recommended to the authorities in Leman street (which is in the heart of the district) and a sergeant was put at my service; but whether it was for love of notoriety or more especially for the gold sovereign, I will not pass an opinion upon. I had heard so much about the squalor, the wretchedness, the poverty and the danger of this dark district of London that I felt very anxious to explore it. At nightfall we started out and commenced at a place called Swallow Garden, a forsaken, dangerous locality in the shadows of which Jack the Ripper committed his first murder. The dark, narrow streets were filled with toughs and drunken sailors, whose loud, maudlin noises filled us with fear. But we had our police officer with us and felt safe. It is just like the women who so bravely cross 23d street and Broadway when escorted by a manly specimen of our finest.

A sudden turn brought us to Dock street and the Sailors' Home. This latter was a large, high building, whose interior resembled the accommodations of a ship. There were no floors but a net work of iron ladders led to the various tiers in which the bunks were situated. The bunks were no wider than four feet and about eight feet long—just room enough to sleep. On the ground floor was the mess room with apartments for officers and others for common salts. The place had the unpleasant odor of a ship and I was glad to get out, but it was so unique and extraordinary that it left a lingering impression. Likewise the odor. Our guide showed me an old salt seated in the door-way who was known under the flattering sobriquet of "Jim, the Miz," because he was so mean and penurious. I wonder if he was any meaner than the son of Benjamin who was troubled with a a decidedly refractory tooth. During the night it robbed him of sleep till finally in his desperation he called upon the dentist. It was two o'clock in the morning and the sleepy molar-operator had located the victim when Isaac exclaimed : "Hold on a minute, how much will it cost ?"

"$1.00 with gas, 50 cents without," was the reply.

"$1.00 with gas ? Day light is good enough for me. I will wait till morning."

My friends, if he was any meaner than that, I feel sorry for him.

After we left the Sailors' Home we began a regular winding in and out through a maze of dark alleys and dangerous byways. When suddenly, we were confronted by a low wooden structure, which had long ago ceased to be a habitation, save for a grog shop in the rear of the first floor over which a decidedly advoirdupois female presided. She was not fair; fat, and about 50. The sergeant asked for a key and this guardian of the spirits handed out a huge, rusty key, which was large enough to serve as an anchor. We then walked along the dilapidated hall to the yard, and on the other side entered a small doorway, from which an old narrow winding stairway led to the floor above.

We entered a large musty room and stood in the sanctum sanctorum of the old court of Wellclose Square. The ruins of the bench, the lawyers' stalls and the jury box were still to be seen, but the judicial ermine was gone, the pleading parchments had also gone the way of the unknown, and moths and rats sported where once legal learning had echoed and pleaded for some poor wretche's life. I thought of Hamlet—alas ! poor Yorick !

On the floor above was the prison room where condemned murderers were confined. It was a stuffy little hole, with a wooden door all bolts and rivets, and a little window near the ceiling grated and screened, through which the sun no doubt shone to mark the passing of the days, which brought the culprit nearer to eternity. We cast a curious glance into the cell and passed on.

Our road then led through *Ship Alley*, *Tiger Bay* and *Plumbers' Row*, to the scene of the second murder, and then we struck into Whitechapel Road where the Salvation Army barracks are situated. This building is a large, spacious one adapted to the purpose for which it was intended. We explained our mission to the attendant, and he escorted us upstairs to a large hall, the size of the entire building used as sleeping apartments by the outcasts who manage to reach this haven of shelter. To me the place looked like a morgue. Large pine boxes, exactly like those used to encase coffins were placed side by side through the length of the building and constituted the beds. There were 280. Lodging is one penny per night, and I watched the poor wretches pay their small dues, go over to a huge pile and take a large rubber cloth, then go to their boxes, and after divesting themselves of their ragged clothing, lie down and cover themselves with the rubber cloth.

One poor fellow was just about retiring when I came in. "This is a very sorry life, sir," he said, observing me. I begged pardon for the intrusion, for it seemed to me here was a case of a soft heart beating under a rough coat—the fellow seemed ashamed of his surroundings. Oh why need the spirit of mortal be proud ? The Czar certainly is a brother to the poor miner. "You see," said the attendant, this keeps them from sleeping in the alleys and wagons, and in the morning they have free use of the lavatory and baths. A breakfast of coffee and rolls can be had for tuppence, and a dinner for 4d. In the winter we give a plate of soup for a 'apenny, and meat and vegetables for tuppence. This keeps them from the grog shops.''

When I left the building, my admiration for the Salvation Army received a sudden inflation, which the suggestion of tambourines, cornets, noise and pandemomium could not shake. I felt like joining it at once—in a hurry, and as it is said they have so many nice sweet girls who fight for salvation, I thought it just the place for one born and destined to be a bachelor like me. But then, there is another side to the question, and I considered the uncertainty of enjoying a curtain lecture accompanied with a tambourine solo or a hallelujah chorus, hence I resisted the temptation.

I have been informed that General Booth intends a like innovation for New York, and I sincerely trust it may be the means of bringing the better element of the social waifs to a happier condition of life. The poor, as the Bible says, we have with us always. The amelioration of their condition is a problem which has been often wrestled with but not thoroughly solved—and perhaps it never will be. It seems we are confronted, ever since Plato, by an impassable brink.

We then reached Spitalsfield, which is a dangerous district and I clung closely to our sergeant, for the place was dimly lighted, the streets similar to alleys, and so crowded with the outcast of both sexes, that we were compelled to walk in the centre of the wagon way.

The sergeant stopped before an old toppling house. Just then a young girl emerged from the rickety building and my eyes followed her till she was lost in the gloom. She was young, and yet, alas, old! I regretted that this bud should be choked and eventually withered by the surrounding human weeds. To think that a young girl whose natural grace should have been the pride of her parents should live and grow up in the darkness of wickedness.

The sergeant peered in shouting ''Biddy, Biddy,'' and an old cracked voice from within called back, ''Is it you, Mr. Sergeant?'' Being assured it was the proper personage, she appeared. The sergeant quietly informed me that a few coppers would be a wonderful ''open sesame'' and so they were, and I noticed that this quality is possessed by the coins of all nationalties, and especially in New York.

''This is Biddy McCarthy,'' said our guide, ''and she will show you her house.'' Perhaps Biddy was proud of her house; perhaps she was not. At any rate, it was too dark for me to study her features. Presently she returned with a candle, and in an old squeaky voice said, ''Follow me.'' I then saw our hostess was an old hag similar to Lytton's in his Zanoni. Her form was shriveled and bent, her nose hooked, eyes cruel and distrustful, cheeks sunken, and a few long teeth projected over the under lip. The odor was not inviting. She led the way up a narrow wooden stairway, which creaked and groaned with our weight and threatened to yield to its unusual burden. If you can imagine a dark, gloomy, silent building, with an old hag crawling up its dingy stairway with a little candle, followed by three perhaps too venturesome Americans, you may know what an uninviting place it was.

Presently the hag stopped. She opened a door and fumes were emitted which almost staggered us. ''This,'' she said, ''is our lodging, forty-eight beds, 2d. per night.'' The business tone in which she said this convinced me that she had often thus induced the not discriminating customers. She entered, but I begged her not to disturb the sleepers. The light awakened a young lad and he curiously looked at us. He had a nice face and sweet eyes, but the stamp of his low associations was plainly visible. I felt sorry for him:

When Biddy McCarthy had shown us her lodging house we deposited our coppers into her willing hands, bade her an affectionate adieu and prepared to go. I suppose the coin was a good elixir or memory stimulant, for our hag suddenly remembered another important room on the ground floor. It was uninviting, with cracked walls and large spaces where the plaster fell out, but she said it was important, for here Jack had committed another murder, and as proof she showed the spattered blood-stains upon the walls. We acknowledged the authenticity and soon breathed freer in the open air. I know not whether we received an invitation to call again, for my mind was not bent in that direction.

We continued our way through this black spot which is found in every large city in a lesser or greater degree, and shortly found ourselves in Petty Coat Lane. You will notice how fanciful a Londoner is in the matter of names. Some of these alleys are no more than four feet in width and run zig-zag so as to render detection almost impossible. Our guide stood at one angle and clearly demonstrated that a murder could be committed without detection and that an approach from one direction would mean escape from the other.

Continuing along the alley we finally emerged into Leman street and entered the tavern of the Red Lion, where, with many a smile and a look of importance, the proprietor told us Dick Turpin lost his life. How glad I was to hear this. You know it is so nice to know exactly where Dick Turpin died—I know you all do.

But our tour was not yet ended. Starting off in another direction we came to the Irish quarter. The sidewalk was about three or four feet in width, and the female denizens, some with decided avoirdupois, sat on the stones with their backs to the walls of the house and the feet at perfect right angles with the gutter, calmly smoking their pipes—short-stemmed clay affairs. Not to disturb their comfort we made a detour and promenaded along the gutter.

Then came the Hebrew quarter. It was Sunday night, but there was no appearance of it, for all the provision shops were open, with their Kosher meat and garlic; the streets were crowded with a moving throng, the thoroughfares packed with peddlers, yelling and extolling their wares, while hundreds upon hundreds of oil torches filled the air with their stench. And amidst it all thousands of children sported, ignorant of the blessings of life and duplicating in their small way, the miserable existence of their parents. But these people are not fastidious, and in the vernacular, with them "Everything goes."

Our stroll through the quarters of the various nationalities was intstructive and novel, and while on the way home we were convinced there is but one London and that the greatest city of the world. The trip through Whitechapel I shall never forget. It was weird, strange and fascinating. The district, however, is a very large one and you must bear in mind that some sections are quite respectable. We are apt to fall into the error of believing all Whitechapel to be disreputable.

And right here I wish to take up the argument with John Burns, the English labor leader, who so recently visited this country. He says New York has more poor than London, the lower class are worse than in London and that vice is greater here. Such utterances from a man who is supposed to know, astonished me. It is a fact which needs no demonstration that every large city has its poverty and its vice, and no amount of reform movements can eradicate it. And the larger the city the greater the evil. And do you, my friends, imagine for one moment that an old city like London, with its 4,000,000 of people, can be better than New York? Do you imagine that New York can show places worse than the ones I have just described to you? And you must remember there is much which I have not spoken about, not being fit subjects for a lecture. When we reflect that our city is decidedly cosmopolitan, that we harbor the refuse of other nationalities, we can feel proud that we are what we are.

But my five minutes about Whitechapel are now up, therefore we will go to Holland. I promised to speak of the dykes of this forlorn country, but at the outset I wish you to distinctly understand that although the country is below the level of the sea it is not surrounded by huge walls which keep back the waters while the waves roll and roar far above the heads of the inhabitants.

I remember while at school reading of the brave little boy who heard water trickling through the dykes, and he put his little fingers in the opening and thus stopped the leakage and thereby saved the whole country. And I remember how the teacher told us what a good little lad he was, and how little things will prevent great accidents, and then we would stare with open eyes and open mouths while she told us to be good and observe little things, and I longed for a dyke with a leak so that I could put my finger in and become great. But nowadays it is easy to become great. All you need to do is to shout reform and death to Tammany Hall—and there you are!

As I was saying, in some places along the shore we find a sea wall similar and a little higher than ours at the Battery. But in the interior we find the country uneven, and at Rotterdam one section of the city is 14 feet higher than the other.

The city is interspersed with canals like at Venice, and it was very interesting to observe the canal boats being raised from the lower to the upper section. The system is the same as that employed in the Erie canal of our State. The fields of Holland are all surrounded by drains, converting them into little islands, hence the country is not adopted to vast agricultural pursuits.

But if we follow the source of the Rhine, whose delta is in Holland, we soon reach Germany, and here we find a different state of things. The Germans are a cultured enlightened people and stand foremost amongst the people of the continent. But the subject which I have selected for this evening is the concert halls and beer gardens. It is said the German is a great beer drinker. I won't deny it, for he is. But if we compare him with the Englander, we find the latter a far greater consumer; and statistics, upon which we always like to rely to prove our point, show that a larger quantity of malt beverages are brewed in old England than in the Fatherland. The Briton likes his "alf-and-alf."

During the course of my progress through the German empire, I was greatly surprised to find a decided absence of intoxication. I wondered if the beverages were less alcoholic, or if the German constitution were much stronger than the

American. It was neither. The great source of evil in this country, and one which social reformers seem to overlook, is the abominable practice of what is termed "treating." This is decidely English, and should be done away with. Just look at it for a moment. Suppose you desire to take one drink, but in the saloon should happen to meet several friends. Common civility or custom requires you to invite them to a drink,each one then invites the other just for appearance sake, and you leave with three drinks, whereas you only desired one.

To illustrate the German custom, let me tell you what befell me in a little German village. It was at the time when the cholera raged in Europe, and having made its appearance in Paris where I was stopping, I crossed into Germany. I struck a small village near the Rhine, and put up at a place called the hotel, but from the noise and bustle required to prepare my room, I was quite convinced several months must have elapsed since my predecessor had revived his weary frame upon the downy bed. But I should not call this bed downy, for it was very uppy—one of those old-fashioned kind which required a step ladder to reach the top with. In the morning while peacefully taking my breakfast, an officer entered and inquired whether a stranger was stopping there. I wondered if it was a crime to be a stranger. In order to stimulate my appetite for breakfast, I was informed the burgomaster desired to see me, and with visons of extradition treaties and international complications before my mind, I appeared before his august personage. The magistrate interested himself in the date and place of my birth, and actually asked me if I ever had the cholera! This seemed so humorous that I could not help smiling, as I negatived the proposition.

I was released upon giving this information, the freedom of the village was at my disposal, and the cholera examination was at an end. In the evening I was introduced to the "400" which, by the way, consisted of but eight persons: the burgomaster, the school teacher, the druggist, the doctor, the general merchandise man, etc. The rendezvous of these celebrated dignitaries was at my hotel and we all gathered about a large round table preparatory to spending the evening in talking and drinking. I felt I was the guest of honor and of course related about my travels. Forgetting that I was not in America, I was about to say, "What will you have, gentlemen?" just like a true American, when one of the "400" rang the bell. A maid appeared and he ordered a drink, entirely ignoring me and the rest. The others then ordered their drinks and I wound up at the finish. During our animated conversation, if the enthusiasm of the speaker "drove him to drink," he would do so, order another and continue his discourse. During the progress of the evening some drank eight, some six, some four glasses, but under our blessed system each man would be required to drink eight glasses and perhaps more than his system could afford.

As you see "treating" is not part of the German system. But I wish to speak more especially of the German beer or concert garden. And this is apropos of the discussion which our Mayor has evoked by his opionion regarding the opening of saloons on Sunday. And I wish to emphasize the fact that a strict observance of Sunday law cannot be obtained in this city, for a personal canvass last Sunday showed me that although the front curtains are down and the doors locked,a thrifty business was done within. In Germany such places are open and in

Frankfort and at Berlin I wandered in the beautiful Palm gardens and parks, listened to the music and watched the people in their perfect quiet enjoyment. There was the *pater familias*, who during the week is tied to his work, with his wife and children, happy in the contentment of his family. There was the mother busily knitting or looking after the children, and was there excessive beer drinking? None whatever. In the evening the open air concert places are lit up by small fairy lamps amongst which the throngs wander in perfect deportment and respectability. I ask you, could such places thrive here? How quickly would they sink to the disreputable and cast an odium about the locality.

My time is rapidly drawing to a close, but I will not stop till we make a jump from Germany to Rome, so that I can tell you what befell me there. It was on August 6, 1892, and I was told a grand festival was to be held in the Church of Sante Marie Maggiore. I hastened thither and having run the gauntlet of beggars and cripples who blocked the doorway seeking alms, I stood within the grand edifice whose marbled pillars were clothed in the finest drapery, with altar decorated and crowded with choir-boys, and as they chanted the hymns, I observed small flakes like snow fall from the ceiling, then coming faster and thicker till the floor, choristers and priests were covered with this apparent snow. The scene was so unique and strange that I could not help but to investigate it, and learned that in some past century a priest and some pope had each dreamed that snow to the depth of three inches had fallen during the night. And each, unknown to the other, had wandered to this spot to ascertain the truthfulness of the dream. And as the story goes, there they met and marvelled, and to commemorate the event a church was built upon the spot (and a costly edifice at that), where each year on August 6th the festival of the falling snow is celebrated.

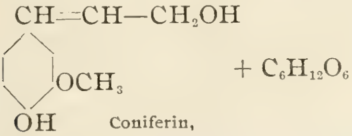
My friends, I pity the poor Chinese in their idolatry and ignorance, but pray, what do you call this? Where is the Christianity? Where is that benevolence when money is spent in decorating the house of God, while God's poor, beggared creatures stand at the doorway penniless! I leave you to think about it.

My contract was not to make you suffer longer than one hour, hence although I have covered very little ground, I will stop. One of the last things I did in Europe was to kiss the Blarney Stone, so as to become a fluent talker, but had I ever dreamed that I would ever address you, I would have kissed it several times more, so as to make my talk more interesting.

THE VARIOUS SYNTHETIC PROCESSES FOR VANILLIN.

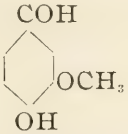
By Prof. VIRGIL COBLENTZ.

The following presents a very interesting study on the subject of Vanillin, by Dr. Altschul, (*Pharm. Centrh.*), which serves to illustrate the possibilities of organic synthesis. The search for synthetic methods of production for the natural perfumes and essences, has like that of the newer synthetic remedies of late years, developed a special field of organic research, Thus we have for many years prepared artificial fruit flavors by the action of fatty acids on the various alcohols, these have been followed specially by such products as the artificial oil of wintergreen (methyl-ester of salicylic acid), eugenol, bitter almond oil (artificial), thymol, artificial musk (nitrated butyl toluenes) and others. During the past decade the study of the group of terpenes has been a very productive field, yielding us such odorous and valuable principles as geraniol, ionon iron, isoborneol, carvocrol, eucalyptol, camphor, vanillin, etc. Among these artificial aromatics, the rapid progress in the various synthetic processes for the production of vanillin demands particular attention. Vanillin was first produced synthetically by Messrs. Tiemann & Haarmann, from coniferin, a glucoside discovered by the latter in the cambial juice of the Coniferæ. This glucoside consists of one molecule of dextrose combined with one of coniferyl alcohol, thus:

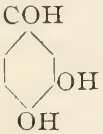


Coniferin,

By means of an oxidizing agent, the aliphatic side chain in this coniferyl alcohol is oxidized into an aldehyde group resulting in vanillin,

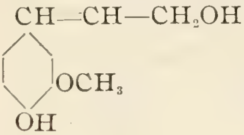


which is the methyl ether of protocatechuic aldehyde

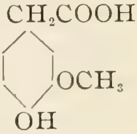


This process was patented by Haarmann in 1877, according to which the hot aqueous solution of coniferin (obtained by exhausting the wood with water) was oxidized with chromic acid, then extracted with ether, the residue remaining after the evaporation of the solvent was vanillin, which was purified by recrystallization.

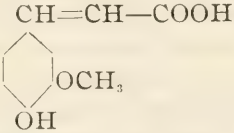
The knowledge that vanillin was a comparatively simple benzole derivative led to a large number of experiments in view to its direct synthesis. The first attempts were to oxidize bodies of a like constitution to coniferin, such as olivil, a gummy exudation from the olive tree, further from the acetyl derivatives of homovanillic acid and ferulic acid, which are to a certain extent intermediate products of the oxidation of coniferyl alcohol.



Coniferyl Alcohol.

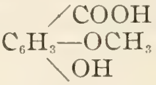


Homovanillic Acid.



Ferulic Acid.

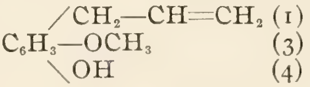
By complete oxidation vanillic acid



$$C_6H_3\begin{cases}\diagup COOH\\ -OCH_3\\ \diagdown OH\end{cases}$$

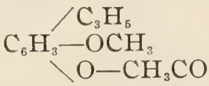
is prodced, from which vanillin may be obtained by the action of chloroform and potassium hydrate, the carboxyl being replaced by an aldehyde group.

Of greater practical interest is the conversion of eugenol into vanillin. Eugenol, as is well known, occurs as the main constituent of clove oil, hence can be readily obtained; in constitution it is an allyl guaiacol



$$C_6H_3\begin{cases}\diagup CH_2{-}CH{=}CH_2 & (1)\\ -OCH_3 & (3)\\ \diagdown OH & (4)\end{cases}$$

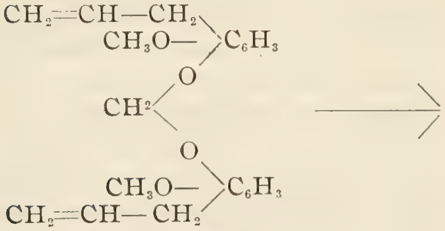
The allyl group ($CH_2{-}CH{=}CH_2$), like the aliphatic side chains, is converted by oxidation into an aldehyde group, thus eugenol is converted into vanillin. An isomeric compound, iso-eugenol, which results from heating eugenol in an alkali solution, also yields vanillin under the same circumstances. Usually derivatives of, and not eugenol itself, are employed, those compounds in which the free hydroxyl group (of eugenol) contains substituting groups which are readily removed by oxidation, being preferred , for example, acetyl eugenol



$$C_6H_3\begin{array}{l}/C_3H_5\\-OCH_3\\\backslash O-CH_3CO\end{array}$$

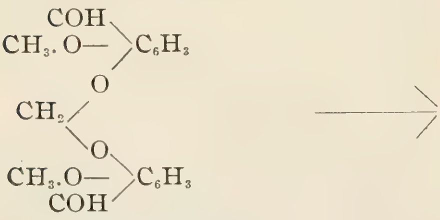
is readily oxidized by permanganate to acetyl-vanillin, which on saponification yields vanillin.

In place of the acetyl derivatives a a number of other eugenol derivatives have answered the same purpose. Messrs. Auger and Boissieu by the action of methylene chloride on eugenol sodium, prepared a methylene-bi-eugenol, this on oxidation yielded methylene-bi-vanillin, which when converted into a hexachloride derivative and treated with hydrobromic acid yielded vanillin.



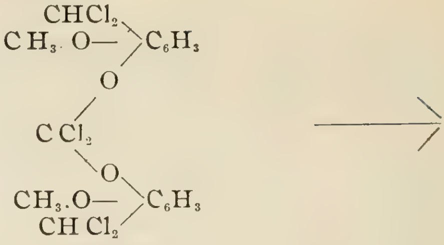
$$\begin{array}{l}CH_2=CH-CH_2\backslash\\ \quad CH_3O->C_6H_3\\ \qquad\quad O/\\ CH^2\langle\\ \qquad\quad O\backslash\\ \quad CH_3O->C_6H_3\\ CH_2=CH-CH_2/\end{array}\longrightarrow$$

Methylene-bi-eugenol.



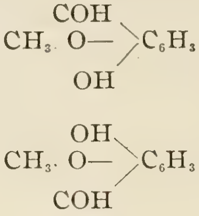
$$\begin{array}{l}COH\backslash\\ CH_3.O->C_6H_3\\ \qquad O/\\ CH_2/\\ \quad\backslash O\backslash\\ CH_3.O->C_6H_3\\ COH/\end{array}\longrightarrow$$

Methylene-bi-vanllin.



$$\begin{array}{l}CHCl_2\backslash\\ CH_3.O->C_6H_3\\ \qquad O/\\ CCl_2\\ \qquad\backslash O\backslash\\ CH_3.O->C_6H_3\\ CHCl_2/\end{array}\longrightarrow$$

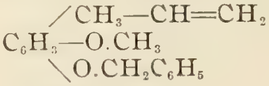
Methylene-vanillin-hexa-chloride.



$$\begin{array}{l}COH\backslash\\ CH_3.O->C_6H_3\\ OH/\\ \\ OH\backslash\\ CH_3.O->C_6H_3\\ COH/\end{array}$$

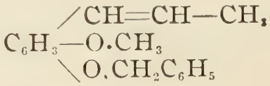
2 mol. Vanillin.

Messrs. Boehringer & Co. introduce a benzyl rest into the hydroxyl group of eugenol, then by heating with potassium hydrate, the iso-compound is produced, this on oxidation yields benzyl-vanillin, which on heating with hydrochloric acid gives rise to vanillin, thus :



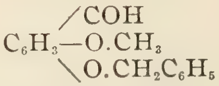
$$C_6H_3\begin{array}{l}/CH_3-CH=CH_2\\-O.CH_3\\\backslash O.CH_2C_6H_5\end{array}$$

Benzyl Eugenol.



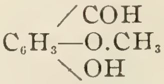
$$C_6H_3\begin{array}{l}/CH=CH-CH_3\\-O.CH_3\\\backslash O.CH_2C_6H_5\end{array}$$

Benzyl-iso-eugenol.



$$C_6H_3\begin{array}{l}/COH\\-O.CH_3\\\backslash O.CH_2C_6H_5\end{array}$$

Benzyl vanillin.



$$C_6H_3\begin{array}{l}/COH\\-O.CH_3\\\backslash OH\end{array}$$

Vanillin.

(*To be continued.*)

Aromatic spirit of ammonia has had its oil of allspice replaced by oil of nutmeg.

THE Alumni Journal

Published under the auspices of the

Alumni Association of the College of Pharmacy

OF THE CITY OF NEW YORK,

115-119 WEST 68th STREET.

Vol. III. MARCH, 1896. No. 3.

THE ALUMNI JOURNAL will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, . . .	One Dollar
Single Copies, . . .	15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
FRED. HOHENTHAL, 857 Third Avenue.

All communications relating to finances and business matter in general should be addressed to
THOS. M. DAVIES, 543 Third Avenue.

All communications relating to subscriptions should be addressed to
NELSON S. KIRK, 9 East 59th Street.

EDITOR.
FRED. HOHENTHAL, PH. G.

ASSISTANT EDITORS.
K. C. MAHEGIN, PH. G.
J. KUSSY, PH. G.
RUD. BOENKE, PH. G.

ASSOCIATE EDITORS,
CHARLES RICE, PH. D.
CHARLES F. CHANDLER, PH. D., M. D., L.L.D., etc.
ARTHUR H. ELLIOTT, PH. D., F. C. S.
HENRY H. RUSBY, M. D.
VIRGIL COBLENTZ, A. M., PH. G., PH. D.
SMITH ELY JELLIFFE, M. D.
GEORGE A. FERGUSON, PH. B.

EDITORIAL.

How are the boys? We hope they are well and busy, and we further hope that every one who knows of another graduate of our College who is not a member of our Association, will go to see him and bring him into the fold. Never forget your *Alma Mater*.

THE entertainments by our Committee are proving a grand success, but we advise the Committee to be conservative and remember the old maxim, "the more haste, the less speed." These social meetings are a new feature, and we must not be to suddenly enthusiastic.

THE latest discoveries in photography have not been sufficiently developed for us to make particular mention of them in this number. When we have more definite details we will devote some considerable space to their description.

NOW, Class of '96, you are on the home-stretch, *go it for all you are worth*, and get there, so you can take your diplomas home with you as a fitting reward for your hard work and a just and well deserved compliment to the eminent professors and instructors who have so faithfully labored to perfect your knowledge of our art.

THE Parade and Reception of the 8th Regiment was a good success due to the efforts of our Business Manager, T. M. Davies, who is the Hospital Steward. It may please many of our members to learn that our genial friend Dr. H. A. Haubold has lately been appointed surgeon of the 8th Regiment, and all who know him will be sure to be attended with the best of skill in case of war, surely when Dr. Louis K. Neff is also on the medical staff.

THE first edition of Prof, J. N. Lloyd's famous work, *Editorpha* or "The End of Earth" having been exhausted, a second edition, with additions, is now in print and will be ready in a short time.

BOOK REVIEWS.

By Prof. H. H. Rusby.

(Continued from February issue.)

Semi-Annual Report of Schimmel & Co. (Fritzsche Brothers), Leipzig and New York, April and October, 1895.

One of the most instructive portions of the report is the chapter on "Sicilian and Calabrian Essential Oils," of which a carefully tabulated statement is given and discussed. It is shown that while the total exportation for 1894 was 78,406 kilos (nearly 13%) greater than during 1893, its value was 1,408,666 Lire (or more than 11%) less. This is attributed in part to the gold premium, which had varied from 10 to 15%, and furnishes a contribution to the pending discussion as to the effects of the depreciation of a national currency upon the prosperity of the agricultural classes.

A great improvement is noted in the quality of Bergamot oil over that of the preceding season. 40% is given as a fair requirement of ester-content. The question of cause of variation in ester-percentage is tentatively discussed, and it is suggested as probable that in "proportion as the land upon which the trees grow has been longer cultivated, so the ester-content of the fruit increases." It is also indicated that while the percentage of oil decreases as the fruit approaches maturity, its ester-percentage increases. It is pointed out that the solubility tests previously given for adulteration of this oil with fatty oils have not been found satisfactory and that evaporating to a residue not exceeding 6% by weight, is a safer method.

Attention is called to systematic attempts to adulterate Lemon oil without affecting its optical character, and the necessity of a satisfactory test for the percentage of citral is again alluded to. The strongest emphasis is laid upon the necessity of preserving this oil in a dark and cool place, in completely filled bottles.

The great rise in the price of Rosemary oil is attributed to the great drought the preceding year, which almost completely destroyed the crop in some sections.

Owing to the same trouble the production of German Rose oil was heavily cut down and this, added to an unusually keen competition among buyers, has caused very heavy advances in the price. This has in turn led to great dullness in the trade. The following statement occurs :

"The Bulgarian Government continues to manifest considerable interest in the rose culture. Last year it despatched an expert to Kezanlik and the surrounding district in order to study the industry and acquaint himself with the general position of the article. It is said that this expert, in the report submitted by him to the ministry, has pointed out the dangers to which the Bulgarian rose culture is exposed by the German competition and has laid stress upon the necessity to improve the arrangements for the preparation of the oil. There can be but little doubt that the Bulgarian distilling plant, which is still the same that was used half a century ago, is quite out of date ; but the chief thing certainly will be to abandon the practice of adulterating the oil of rose, and thereby to obtain for the Bulgarian article a greater measure of confidence among the consumers. In our opinion the greatest danger to which all producers of rose oil are exposed lies in the advance of chemistry, which as it is seen in the case of neroli oil, is now paying particular attention to the artificial preparation of such oils."

The statement that Bulgarian Rose oil contains roseol while the German contains geraniol, is combated.

Reference is made to a sudden and large demand for Jaborandi Leaf oil, but the use made of it is not known.

Lavender oil with more than 40 per cent. of ester content is said to be very rare.

The damp season in the producing district has caused a very low percentage yield of Lovage oil.

The remarks relating to Lime oil are so very interesting that we reproduce them in full:

"In our last report, (p. 34P), we have already given details concerning the properties and the origin of the West Indian oil of limes from Citrus medica L. var. acida Brandis. We then pointed out that whereas the juice of the West Indian lime fruit is sour and contains citric acid, that of the Southern European lime from the Citrus Limetta Risso is sweet. The essential oils of the plants are also very different in their characters, for while the oil of the West Indian lime has a strong odor of citral, and is hardly distinguishable from oil of lemon, except by the greater intensity of its odor, the lime oil from Citrus Limetta Risso does not in any way resemble oil of lemon. Its odor on the contrary reminds one of oil of bergamot. We have had an opportunity of subjecting an oil of this kind to a chemical examination, and we shall shortly report the results. We have to express our indebtedness to Mr. Siles of Reggio, for detailed information concerning the parent plants of the fruit as well as for a supply of the oil. In Calabria the lime tree is known as arancio, or Limoncello di Spagna, and its fruits as aranci, or limi di Spagna. At the flowering period, which falls in May, the tree bears flowers of a pure white, and the fruit ripens in December or January. The shape of the fruit is more globular than that of the lemon, and the nipple, which is strongly developed, is broader and flatter. The fruit although edible, has a mawkish, sweet and unpleasantly aromatic taste. For the purpose of oil manufacture the green fruit is pressed before ripening, as the yield is then at its greatest. It appears that oil of sweet lemon has already been investigated chemically as far back as 1860, by M. S. Luca. It is true that that author mentions Citrus Lumia as the parent plant, but from the description of the fruit, which entirely agrees with that given above, as well as from the Italian name applied to it, and the result of the investigation, we have reason to believe that the oil investigated by him was the same."

The April report contains a valuable table contrasting the requirements of 17 pharmacopœias with reference to Peppermint oil, and this is followed by several pages devoted to the differences between the oil of English, Japanese and American production. The best evidence so far obtainable, shows the following percentages of menthol in these oils: American, 45-60; English, 58-67; Japanese, 60-77.

The content of santalol in East Indian Sandal Wood oil is placed provisonally at about 90 per cent. It is predicted that the Macassar wood oil may entirely disappear from commerce, as it cannot be produced on a paying basis in competition with the former. Venezuelan oil is said to be produced with great irregularity.

The determination of the freezing point is considered an ample provision for testing star-anise oil, and it is stated that a great decline has recently been witnessed in the quality of the oil as determined by this method. A practical method for obtaining it is thus described:

" Before the sample is taken from the tin the contents of the latter should be carefully examined, so as to see whether they are completely dissolved, and have been well stirred. About 200 grammes of the oil should then be taken from the tin, poured into a bottle and an accurately marked thermometer, graduated, at least to half degrees, placed into this sample. The sample is then cooled down to about 5° C. by placing the bottle in broken ice or in icewater. During the process of cooling care should be taken to avoid shaking the bottle or moving the thermometer, as this might cause the crystallizing process to set in prematurely. When the oil has cooled down to 5° C. it is made to crystallize either by adding to it a little crystallized star-anise oil or by scratching the side of the bottle with the thermometer. While solidification is proceeding, the oil should be steadily stirred, in order to expedite the freezing process. In the course of the process the temperature rises rapidly, and the point at which the mercury-column ceases to rise should be noted. This is the freezing point." The mean freezing point is considered 16° C., the highest observed was 17.5° and the lowest 14°.

Oil of Tansy has acquired a fresh importance as being the best source of thujone (tanacetone).

The following resumé of the occurrence of Salicylate of Methyl in the vegetable kingdom is of great value:

"Salicylate of methyl has recently been detected by E. Bourquelot (*Comptes rendus*, 119, 802) in the root of Polygala vulgaris L., P. depressa Wender, and P. calcarea Schulz, as well as in the stalks of Monotropa hypopitys L. Bourquelot considers it probable that, as is also the case with the bark of Betula lenta, the ester is not present in the above mentioned plants in the free state, but is formed by the action of a ferment upon a body analogous to Proster's Gaultheria.

"Salicylate of methyl appears to occur rather frequently in the vegetable kingdom; so far as we are aware it has up to the present been found in:*

Gaultheria procumbens L. (flowers and leaves)—*Cahours*, 1843.

Gaultheria punctata Blume (flowers and leaves)—*De Vrij*, 1871.

Gaultheria leucocarpa Blume (flowers and leaves)—*De Vrij*, 1871.

Gaultheria Leschenaultii D. C. (flowers and leaves)—*Broughton*, 1876.

Betula lenta Willd (bark)—*Procter*, 1844

Polygala Senega L. (root)—*Langbeck*, 1881.

Polygala alba (root)—*Reuter*, 1889.

Polygala vulgaris (root)—*Bourquelot*, 1894.

Polypala depressa Wender (root)—*Bourquelot*, 1894.

Polygala calcarea F. Schulz (root)—*Bourquelot*, 1894.

Monotropa hypopitys (stalk)—*Bourquelot*, 1894.

Laurus Benzoin (bark)—*Schimmel & Co.*, 1885.

Spiræa Ulmaria L. (flowers)—*Schneegans* and *Gerock*, 1892."

The position of the artificial article is thus stated:

"Synthetic wintergreen oil, however, has given a death-blow to the natural article. Even the most bigoted opponents of synthetical preparations cannot deny that pure methyl-salicylate is a perfect substitute for the natural oil, nor have all attempts to discredit the artificial oil been able to prevent it from finding employment and recognition everywhere. The price has been depressed to its lowest possible limit by competition."

In this abstract I have endeavored to give only the more important generalizations of the report. The entire work is crowded with other valuable matter which want of space forbids our reproducing.

---

*This list might be considerably extended.

THE MOST RECENT WORK.

Action of Carbonic Oxide on Man.—The experiments made by the author J. S. Haldine, on himself, show that the symptoms caused by carbonic oxide depend on the extent to which the Haemoglobin has been saturated; the percentage saturation of the Haemoglobin of the red corpuscles may be estimated during life by a simple colorimetric method. Carbonic oxide is a ''cumulative'' poison. The symptoms do not become sensible during rest until the corpuscles are about one-third saturated; with half saturation, the symptoms (respiratory distress, headache, etc.), become urgent.

Similar symptoms are experienced by mountaineers at high attitudes.

When air containing this gas is breathed, about half of that actually inhaled is absorbed, except when absorption is coming to a standstill.

The time required for the production of sensible symptoms in an adult depends on the time required for the inhalation of about 660 cc., or the absorption or about 330 cc. of the pure gas; this time in different animals varies with the resperatory exchange per unit of body weight and is about 20 times as long as in man as in a mouse; hence, a mouse can be used as an indicator in a coal mine before men penetrate into it.

The maximum amount of carbonic oxide capable of being absorbed by the blood from air containing a given small percentage, depends on the relative affinities of oxygen and carbonic oxide for Haemoglobin, and the relative tension of the two gases arterial blood. The affinity of carbonic oxide for Haemoglobin, is about 140 times that of oxygen, and the oxygen tension of human arterial blood is, approximately 16 per cent. of an atmosphere.

Distinct symptoms, appreciable during rest, are not produced until about 0.05 per cent. of the gas is present, with about 0.2 per cent. urgent symptoms are produced. With a given percentage of carbonic oxide in air, a certain percentage of saturation of the blood is reached within about 150 minutes, and is not afterwards exceeded, however long the breathing of the vitiated air is continued.

The disappearance of the gas from the blood when fresh air is again breathed, is always much slower than the absorption of the gas, and is chiefly due to dissociation of carbonylhaemoglobin by the mass influence of the oxygen in the pulmonary capillaries, and the consequent diffusion of the gas outward through the alveolar epithelium.—(*J. Physiol*, 1895, 18, 430-462).

Function of Diastase in Plants.—Diastase may be readily detected in the cells of plants by digesting the tissue, for a sufficient length of time, with a solution of guaiacum in absolute alcohol, and then immersing sections of it in a dilute solution of hydrogen peroxide; a fine blue color is developed in those cells which contain the enzyme. The author (J. Grüss) finds that diastase is always present in those parts of the plant from which it is necessary that starch should be removed for purposes of nutrition. As the amylolytic power of diastase is inhibited by the presence of more than a certain limited amount of glucose it would seem that in assimilation the formation of glucose precedes that of starch, and continues as long as the sugar is removed by circulation. When, however, the sugar commences to accumulate beyond the requirements of the organism, it undergoes polymerisation to maltose and eventually to starch, which, in the presence of glucose, is not hydrolyzed by the diastase; as soon, however, as the glucose is reduced by circulation below the inhibitory proportion, the starch is hydrolyzed by the diastase, and the supply of soluble nutritive material thus maintained. The amylolytic power of diastase is increased in presence of salts of the alkalies and alkaline earths, and by asporagine, etc.—*J. Pharm.*, 1895.

Emulsionizing heavy Coal-tar Oils.—The heavy coal-tar oils possess great disinfecting powers and would find greater application if a satisfactory emulsifying agent could be found, so that it could be handled with some degree of convenience. C. Durand recommends in the *Archiv de médicine et phar.*, 1896, the use of powdered horse-chestnut for this purpose, for the preparation of a liter of this emulsion 50 Gm. of the powder are taken with 50 Gm. of water and 900 Gm. of tar oil the first two ingredients are well mixed, then the oil added and the whole well agitated. This produces (as is stated) a permanent emulsion which can be diluted into water in all proportions without separation. The same author recommends this method of preparation for emulsion of petroleum products, oil of cade, etc., where they might be employed in treatment of various skin diseases.

Valuation of Ergot.—Prof. Beckarts applied the Keller's method of assay for ergot to a large variety of commercial samples and finds that the small grains yield a much larger percentage of cornutin than the large and well developed grains, also that as regards activity the Russian ergot stands best, followed in order by the Austrian, Spanish and lastly the German. Although it is not yet definitely settled as to whether the activity of ergot depends upon one or several principles, yet it is generally agreed that "cornutin" is one of the most active, hence Keller's method of assay depends upon the isolation of this principle. The drug is first exhausted with petroleum ether (benzine of boiling point under 50° C.) to remove the fatty matter, then dried, mixed with magnesia and a little water and extracted (by shaking) with ether, of the supernatant etherial fluid, a volume representing 15 Gm. of the dried drug is drawn off and shaken with acidulated water, from this the cornutin is extracted by ether after adding ammonia, the etherial solution is evaporated, in a tarred capsule, to dryness and weighed. This represents the activity of 15 Gm. of the dried drug free from fat.

Recovery from Morphine Poisoning by the Use of Potassium Permanganate.—The *Brit. Med. Jour.* reports recovery in a case where a man had taken a solution of one Gm. of morphine sulphate, by the use of potassium permanganate. The physician found the patient, who had taken the dose one and a half hours previously, in a very critical condition. 0.35 Gm. of the permanganate dissolved in 300 Gm. of water were introduced into the stomach, after which the patient was kept in motion as much as possible. In half an hour vomiting ensued. This was followed up by two more doses of the same strength at proper intervals, each dose being followed by vomiting. The patient very soon showed signs of improvement, and in ten hours all danger was over.

A Sevsitive Reagent for Albumin in Urine.—The following reagent, recommended by Dr. Jolles, recognizes with certainty the slightest traces of albumin without being in any degree influenced by the composition of the sample:

Mercuric chloride-----	10	Gm.
Succinic acid---------	20	"
Sodium chloride ------	10	"
Distilled water---------	500	"

The test is applied by acidifying 5 Cc. of the filtered urine with 1 Cc. of acetic acid (30%), following with 4 Cc. of the reagent, and shaking. In a second test tube 5 Cc. of the filtered urine are acidified with 1 Cc. of the acetic acid, followed by 4 Cc. of water. This will show the presence of macin, enabling one to compare the two so as to avoid any false interpretation of the test. This reagent will detect the presence of one part albumin in 120,000.

Alumni Column.

WITH the present issue of the JOURNAL there has been added and inaugurated a column which will be devoted to classes having no special representative as have the classes of '93, '94, '95.

The earnest co-operation and support is solicited of graduates to contribute their "mite" to same, of matters pertaining to the college, the alumni, or their respective class.

ALUMNI SOCIABLES.

THE first of the Wednesday evening receptions was held on February 19th. It scored such a success that the committee have decided to give another in March, to be conducted on a more elaborate scale. We cordially invite all our graduates, as we can assure them a pleasant evening. Following is the schedule:

March 4th. Smoker.

March 11th. Lecture by Dr. Wendell C. Holmes, on "The bright and dark sides of hospital life," with illustrated stereopticon views.

March 18th. Reception.

March 25th. Card party.

NELSON S. KIRK,
W. A. HOBURG, JR.,
GEORGE F. BURGER,
Committee.

THE "embryo" sociable of our association was held in the assembly rooms of our college, on Wednesday evening, February 19th. The attendance was largely participated in by the younger element of the Association and by the students of the college. The festivities commenced at 8.30 P. M., and came to a climax a few minutes before midnight.

Programme was as follows: March, Lanciers, Waltz, Polka, Quadrille Waltz, Schottische, Waltz, Yorke, Two Step, Lanciers, Waltz. Varsouvianna, Schottische, Waltz.

Among those present were: W. H. Ebbitt, '79; J. T. Comerford, '86; Floyd M. Stage, '93; J. S. Stage, '93; E. F. Lohr, '93; W. Hoburg, '93; A. Herold, '94; N. S. Kirk, '94; J. H. Wurthmann, '94; H. Struck, '94; Geo. C. Manville, '95; Fred. L. Flick, '95; R. Gies, '95; C. P. Gould, '96; H. C. Van Buskirk, '96; E. J. Zeiner, '96; W. Gregorious, '96; A. H. Carter, '96; C. L. Stephens, '96; W. C. Vincent, '96; O. G. Qugham, '97; D. J. O'Brien, '97; T. G. Wilbur, '97; W. H. Roberts, '97; H. C. Neubrand, H. Wilson.

The ladies roll consisted of: Mrs. R. Gies, and the Misses C. Ruckert, E. Ruckert, C. Schmidt, M. Groome, B. Lohr, H. F. Euler, N. Peterson, N. S. Sowter, T. M. Boyer, D. Barrett, F. Stage, B. Schall and Mrs. R. Ross.

HERMAN A. R. GRAESER, our worthy ex-President, deserves recognition. Although being a student in medicine at the P. and S. and conducting his prosperous pharmacy, yet he finds time to attend the Alumni meetings. His entrance to the amphitheatre at every lecture provokes an outburst of applause from the audience, prominent among which are the students of the College who recognize in Mr. Graeser one of their best friends.

ADOLPH HENNING, our genial Treasurer, commands the respect and admiration of every member of the Association by the earnest and steadfast manner in which he executes the affairs of the Alumni. Mr. Henning should be looked upon as an example by all enterprising members. It is noteworthy to state that Mrs. Henning frequently graces the Alumni room with her presence.

A HIGH hat brigade has been formed by Messrs. Hoburg, Kirk and Tannenbaum. The object of the organization is to induce all the members to appearat the meetings and sociables with high hats. Gentlemen; may your honest endeavors be crowned with the high hat of success.

IF appearances signify conclusions, we may look forward to having our ranks swelled by a large delegation from the Class of '96. At every meeting the class has representatives present.

MESSRS. HOBURG, Kirk and Burger compose the Entertainment Committee of the Alumni room. With such able entertainers as Messrs. Hoburg and Kirk on the committee, our Wednesday night smokers and our monthly sociables will certainly become famous.

ALL matter relating to this column should be addressed to

GEO. F. BURGER, PH. G.,
115-119 W. 68th st.

"Doctor, didn't I understand you to say that brandy is a good remedy for dyspepsia?" asked a Dallas society lady of her family physician.

"Yes, Mrs. Yerger, it is an excellent remedy.

"I don't agree with you, Doctor. Before I kept brandy in the house my husband had dyspepsia every few weeks, but now he suffers from it every day, and it seems to be getting worse and worse."—*Texas Siftings.*

Alumni Notes.

BREVITIES.

Mr. James T. Shillinglaw, '87, formerly in business in Malone, N. Y., under the firm name of Shillinglaw & McNulty, is now with P. B. Knapp & Sons, 362 Hudson street, New York City, he having sold his interest in the above named firm.

Mr. August C. Giest, '91, has accepted a position with W. F. Krembs, 1125 Madison avenue, New York City.

L. Ambos, '93, formerly with Herman Graeser, of 40 Stanton street, is now at McKane's pharmacy, Willis avenue and 139th street.

Mr. F. G. Hills, '94, has resigned his position at P. B. Knapp & Sons, 362 Hudson street.

Samuel Morris, '94, is no longer with J. W. Case, of Somerville, N. J.

Mr. A. E. Wrensch, '95, has purchased a store in his native town of Montclair, N. J.

J. Oehler.

'93 NOTES.

Mr. Tannenbaum's other interests being so varied and occupying so much of his time, caused him to resign the office of class reporter. At his earnest solicitation, I undertook to keep up the interest in the columns and, while I cannot hope to do as well as he did, yet with the co-operation of my classmates I will endeavor to keep the column as eagerly looked for every month as it has been heretofore.

Lischke has been heard from at 10th ave. and 31st st. How is it, Lischke? Could not your aesthetic taste be satisfied in New York, that you have to travel to Bridgeport every week?

Ricksecker, he of Napoleonic serious mien, is with Johnson Chemical Co., 353 3d ave.

At last I can add to Schuyler's peace of mind. Twomey has been discovered in the wilds of Sheepshead Bay. He says, his cup of happiness is full, for does not the august "Paddy" Gleason again rule his native town, with a firm and gentle hand? (Also an axe.)

Curtis will graduate as a full-fledged M. D. from the University when the flowers bloom in the Spring. Beware, ye long-suffering and patient public.

Wrensch has moved down-town. He is managing Wheeler & Guck's store on Catherine st.

The first social evening at the College on Wednesday evening, the 19th of February, was a brilliant success. For a first effort it went beyond anything, anybody had expected, and the result was a most enjoyable evening for everybody. The music was good, the girls pretty, amiable and plentiful, the floor in excellent condition, and everybody ready for a good time. It was just like one big family party and everybody went home, vowing to come to the next one on March 18th. There was room for more, so come all who were not there, as well as those who were, and bring your friends with you. '93 was represented by the Stage brothers and sister; "Billy" Hoburg alone and unchapperoned, and yours truly with sister.

Any items of information which will add to the interest of the column will be most gratefully received and acknowledged.

Eugene F. Lohr,
375 3d ave.

'94 NOTES.

Our expectations of a pleasant lecture were fully realized at Prof. Heydt's discourse on his European trip, which was delivered on the 12th. His description of the famous Whitechapel district in London was very interesting, as was the peculiar "go as you please" system of indulging that prevails in Germany. Prof. Heydt will meet us again in April. In the meantime, look for that sociable notice in another column. Come over to see us and show the boys you are not a "sleeper."

The last Alumni meeting was a very pleasant one to the '94 delegation; first, because of Treasurer Henning's report, which showed that the ball had netted us a slight profit; and secondly, Secretary Hoburg's presentation of the names of Case, Struck and Erb for membership.

Since assuming the management of the subscription department of The Alumni Journal I have received some very nice testimonial letters from such men as Prof. Lloyd, Messrs. Milhau, Frölich, Wilcox, Linnig, Murrison, etc.

QUITE a number of the '94 boys contemplate joining the College. In fact, Krueder, Wurthman and Kirk have already been proposed for membership.

H. A. HEROLD is rapidly acquiring proficiency in amateur dramatic circles. We hope he will entertain us some day with one of his dramatic sketches: "Fun in a drug store" might prove a success, especially if we could induce Stoerzer to furnish the libretto. We would promise not to treat him as they do in Jersey, where after the first act the masculine portion of the audience go out, pretending to seek a florist, but, not finding any open, patronize an egg foundry instead. Returning, they wait for a chance opportunity in order to pass them up one by one. Result—a predomination of H_2S odor.

ROBERT M. ULLRICH some time ago bought a store on Throop avenue, near Myrtle (Brooklyn again). Being quite a hustler, his competitors have doubtless felt his proximity by this time.

F. C. A. SCHAEFFER, of the firm of Steinam & Schaeffer, is interested in three Brooklyn stores, the one on Driggs and Graham avenues being most graced by his presence.

EZRA J. HORTON is located in his home in Peekskill, N. Y., where he is with C. E. Gregory of N. Division street.

HARRY C. ANNESS, night manager of Hudnut's Pharmacy, Broadway and Fulton street, is said to be one of lower Broadway's most popular drug men.

CHAS. B. PRYOR is again in town. A few weeks ago he accepted a position with a firm on Hudson street.

ISADOR FRIED has left Dorn in Columbus avenue, whom he had been with for some time.

PAUL B. HUDSON has left Fear & Co. and is now with McKesson & Robbins of this city.

HENRY G. BORN is still with Livingston & Wenzel, where he admirably displays his pharmaceutical ability. Last year with his Remington we considered him a "scorcher." Now he talks of getting a tandem.

W. C. YOUNGS is now with Eimer & Amend, 18th street and Third avenue.

DON'T forget your lady friends on reception night, March 18th.

NELSON S. KIRK, PH. G.
9 E. 59th Street.

'95 NOTES.

FEBRUARY 12th being a legal holiday, Mr. Heydt's lecture was not as well attended as it should have been, although the subject was very interesting; of our boys there were present, Messrs. Flick, Gies, Jorgensen, Ohlandt, Drollinger and myself.

LOST.

ON May 9th last, a number of '95 boys owning the following names: Aquaro, Bailey, Bannon, Blackmore, Bradner, D. E. Brown, W. D. Brown, Brizizinski, Burns, Carter, Chambers, Cherey, Christianson, Connolly, Davis, Durr, Eckstein, Engle, Ferrer, Fletcher and Flick.

Any information relating to the above named gentlemen will be thankfully received.

FOUND.

WELLS was visiting his home at Milford, Pa., when last heard from. Cooley is at Olean, N. Y. Wrensch has bought a store in Montclair, N. J. Here's luck to you Wrensch. Ohlandt is with M. C. Ridder, 409 First street, Hoboken, N. J.

I SAW Boyd at the Herald Square Theatre, on Wednesday, February 19th, accompanied by a young lady. What did you say? Was it his sister? Well, I guess so; its only natural that he should take his sister, you know.

THE next alumni lecture promises to be an interesting one, the subject being "The Dark and Bright Sides of Hospital Life." Don't fail to be there.

RUD. BOENKE, PH.G.,
437 E. 87th St.

AT a meeting of the class of '97 held some time ago, the following officers were elected: President, H. J. McKellar; First Vice-President, F. W. Rutherford; Second Vice-President, S. S. Shiers; Secretary, W. K. Albright; Treasurer E. J. Diekmann; Class Historian, Miss Fellows; Sergeant-at-Arms, Oscar Wilde.

All communications in regard to class of '97 should be sent to R. W. Milne, '97, to 20 W, 32d Street, or at the College.

Senior Class Notes.

THE N. Y. C. P. ST. VALENTINE'S DAY.

BY MISS MADGE O'CONNOR.

We heard the "Phillies" and saw them,
And candidly we were surprised.
We expected sober, staid, young men,
But their appearance opened our eyes.
Their yells and musical war cries
Remind us of our "ninety-six"—
Their ladies, genuine Minervas,
Full of learning and maybe of tricks;
Their boys, with lungs of Comanches,
Filled the halls with resonant sounds,
Like cowboys on Western ranches,
Whose roistering knows no bounds.
Yet in courtly "kotowing"
The "heathen Chinee" is not in it
With the "Phillies." Their bowing
Reminds of the French minuet.
However, it must be confessed
That the "Phillies" rank second best,
As the New Yorkers stand forth
Without rivals on earth.
Some one of these days
We'll deflect Roentgen's X rays,
And then we can tell
Why New Yorkers excel.

A LARGE number of the Senior students succeeded in passing the City Board of Pharmacy of February. About one hundred and twenty took the examination and nearly one hundred were successful in attaining the desired rating.

IF those Coniacs could find their way over to desk 141a the occupant promises that no names will be mentioned.

I HAVE been asked by several of the Class to state plainly the true history of the difficulty our Class has been laboring under in the adoption of a Class Flag. This would take too long and would be wearisome to some, but looking on the situation from a sensible and united standpoint, it would have been better had the Class unanimously adopted some design other than the two under dispute. The feeling that is now manifested can never be subdued, and notwithstanding, the advocates of the N. Y. C. P. flag claim theirs as the official, yet it is understood that a majority of the sustainers of the Benzol flag will adorn their rooms with the College colors, arranged, not in a kindergarten A B C arrangement, but in the form adopted by our College, our predecessor classes and also as an emblem of the teaching of our good Professor Chandler. The action of either side does not show a united feeling, and so near the close of a Senior year the situation seems almost uncalled for. Why could it not have been left to the College officials and insured us a more united Class?

THE first class of "The First Aid to the Injured" took their examination some days since and succeeded in passing three out of the class of fifteen. Of those two would have undoubtedly failed had it not been for their "face." Three who were not granted a sheepskin and who's answers seemed very satisfactory were undoubtedly forgotten.

RUSBY says: "If you want it real hot, mix a mustard plaster up with cold water." We would judge that this could be explained on the theory that a hot supper can be had by eating pepper sauce and crackers.

MR. A. DEUTSCHBERGER, Mr. F. H. Finley and Mr. C. Wetmore Smith, were successful in passing the King's County Board of Pharmacy of January last.

OUR Glee Club is coming to the front after all and is making very favorable progress under the leadership of Mr. Bagley, a member of the class of '97. The officers of the Alumni Association kindly offered the use of their room and piano which was very thankfully accepted.

WE are sorry to learn that only two feminine faces will be able to gaze upon the audience from the stage at Carnegie Hall on commencement day. Miss E. M. Aschenback, a member of section one, has closed her college work and will soon (we are informed) have "Mrs." prefixed to her name instead of the affix Ph.G., which would have undoubtedly been her pleasure of attaining had she remained to the end of the term. Miss Aschenbach was a faithful and hard working student, and although laboring under many difficulties, she stood at the head in the practical work of the pharmaceutical laboratory. Her future home will be at New Rochelle.

A VERY pleasant time was reported at the social hop of the alumni, on the evening of February 19th. The senior class received a very cordial invitation, and was represented by a goodly number.

PROFESSOR BASTIN, of the Philadelphia College of Pharmacy, accompanied by others of the college staff, and about fifteen of the senior students made us a very pleasant call a short time since. The company was of a very jovial nature, and gave some very clever class cries. They spent the evening at a Broadway theatre, and on the following day accepted an invitation extended to them by Messrs. Parke, Davis & Co. to visit the emporium of the company.

A MEMBER of the junior class (we were unable to learn his name) attended one of our pharmacy lectures, and at first was somewhat interested, but as the blackboard equations waxed long, and still longer, and the articulation from off our silver tongued professor grew swift, and yet swifter, the poor fellow fully realizing his work of next year calmly fell asleep. Undoubtedly he will awaken next year.

THE class motto recently adopted is, "*Ne cede malis*," meaning, "Yield not to misfortunes." Our president thought it was, "Yield not to temptation," but this small error is easily excusable in view of the fact that he used to teach a Sunday school class before coming to the city.

THE contract to make the class pin of '96 has been awarded to the Gorham Co., and can be had by members of the class from any of the committee having the matter in charge. The pin is conceded by all to be very neat and serviceable; besides there are more pins of this design among the graduates of N. Y. C. P. than any other.

AT a regular meeting of the class held Wednesday, February 19th, the Executive Committee on Commencement Exercises was elected. The committee consists of ten, including the regular class officers and the following five members: Protzmann, C. Wesley Smith, C. Wetmore Smith, J. M. Kraft and J. Morris.

AT a meeting of the class it was voted that we have our pictures taken as a remembrance of college days.

Regular cabinets of each member are to be made from which a mat picture will be made by the photographer. It may not be out of order to remind the class that each member should go to the photographer as soon as possible as a great many must be taken requiring some time. One advantage of no small degree is that each member may in addition get a dozen photos at greatly reduced rates. Any information relating to this may be obtained from O. F. Ives.

THE members of Section one are sorry to lose Miss Aschenbach as a classmate. Ill health has obliged her to discontinue her studies and seek country air and rest. She will later join one of the following classes. We all wished that she might have graduated with the Class of '96.

A LARGE number of '96 took the examination of the City Board on February 10th. All hope to have passed.

IT was pleasing to note the large attendance and unusual interest taken by the students and their friends at one of Prof. Rusby's lectures at the college Monday evening, February 10th. The lecture was one of the Professor's favorites and was beautifully illustrated with lantern-slides showing the plants of the different natural orders that have been taken up in the course. The part of the lecture relating to Cinchona barks was most interesting and instructive, the history of their growth and and mode of collection based on Prof. Rusby's personal experience, while in South America.

JONATHAN MORRIS,
Rep. Sec. 1.

POISONING BY FLUTES.

Dr. J. H. Smith, in a paper read at a meeting of the Homœopathic Medical Society, reports several cases of "flute poisoning." Grenadille, or cocus wood, has for many years been employed in the manufacture of this musical instrument, inasmuch as it gives a brilliant and powerful sound, which mellows and becomes more flexible with the age of the instrument. Dr. Smith says: "There is most trustworthy testimony from Germany, England and America to the fact that cocus wood, and no other material, is found by certain susceptible flutists capable of producing serious irritation of the lip, necessitating the use of a crescent shaped silver or gold lip-plate, shellacked to the mouth-hole or embrasure." The author describes the malady as a lip excessively swollen, extremely red, with large blotches covered by vesicles. Relief is had by the application of a solution of nitrate of lead in water, 1 to 2000. —*Drug Cir.*

A "STATUTORY" CHEMIST.

It seems rather odd to us on this side of the water to hear our English pharmaceutical brethren describe themselves as "chemists," for, while the pharmacist is necessarily a chemist in some degree, at least, we apply that term with a wider signification; but it is still odder to learn that this title cannot be safely appropriated in Great Britain by any one not a druggist.

Two important cases in which its use was a part of the contention were recently on appeal before the court of last resort in Scotland. Two persons who were dealers in scientific and especially photographic apparatus had described themselves on the signs at their place of business, the one as a "photographic chemist" and the other as a "technical chemist." They kept and sold the poisonous chemicals which photographers use, and claimed that they were justified in selling at retail any articles required in the arts, whether poisonous or not. For having made such sales they were prosecuted under the pharmacy act, and at the same time their right to the use of the word "chemist" was also legally questioned.

Although the judges were evidently not in sympathy with the restrictions of the pharmacy act, at least in so far as it applied to these cases, they felt bound to decide against the defendants.

These points had been previously settled in England, and it is now clear that throughout England no one but a pharmacist has the right to sell scheduled poisons at retail for any purpose whatever, and that even half of the title of the "chemist and druggist" cannot be appropriated by any other dealer.

We might remark in passing that we understand that the "chemist and druggist" cannot even call himself a pharmacist, which he really is, because that might be considered an encroachment on the domain of the "pharmaceutical chemist," who possesses the "major" qualification, while the "chemist and druggist" is only a "minor" man.

Perhaps some day the simple title of pharmacist will be found to answer everywhere as an eminently proper and convenient title for those whose business is pharmacy.—*Drug Cir.*

POSITION DURING SLEEP.

There is a well-known physician of this city who has been studying for some years the positions of persons during sleep.

"Sometimes I wonder," said the doctor, "why our learned scientists have not paid more attention to the positions which, persons young and old, are prone to assume during sleep. It seems to me that the phenomena really offer a fruitful field of study, for I have come to the conclusion that there is an important physiological meaning or significance in the different sleeping positions.

"The natural attitude adopted by young children, when free to do as they please with their body and limbs is interesting. You have seen, of course, chickens asleep on the roost. You may have noticed them, also, with the head under the wing and the legs drawn up close to the body. Now that is exactly the position of the chick in the egg. Similar conditions may be noted among the four-legged animals. Puppies and kittens lie curled up during sleep, just as they were born.

"Now, what is the natural position of babies during sleep? You will find in nine cases out of ten that young children, when old enough to control their limbs and are unfettered by clothing or cover, draw up their legs and bend their heads over in their arms. They simply resume the position they occupied in embryonic life.

“Of course, the trouble is in too many cases that our children are not allowed to sleep according to their natural inclinations, and mothers and nurses interfere with the position most convenient for them. So, too, Indian babies are seldom allowed to sleep in the position they like best. The squaw bundles the little one into a motionless thing, and often straps the child tightly to a board.”

“But you will observe how babies sleep in warm climates, where they are not bothered with much clothing, you will find them sleeping in the natural position I have described. Whether they sleep on mats of grass, on the warm earth, or in hammocks, the children lie in the curled-up position. My attention was first called to this position by the negro babies down South. There I often saw the negro mammy lay the black baby down to sleep on its stomach and wondered whether or not the child was comfortable.

“Since then I have found this practice common among mothers and nurses in Southern countries. They know that their young ones like to sleep in the same position as do many animals—that is, with the stomach downward and the legs and the arms, usually, bent under them.

“After a while boys and girls of 4 or 5 years of age slightly change their attitude during sleep. They now lie on the side, face also on the side, and with the legs drawn up, using one of the arms as a pillow. This is the position assumed by the higher order of monkeys in their sleep.

“It is not until boys and girls grow up that they stretch out their limbs full length in sleep.

“The lower order of monkeys sleep in the crouching position with the head bent down upon the knee.

“There is one position during sleep that is peculiar to humen beings. It is lying flat upon the back. No animal of its own choice takes such a position in sleep. One of the keepers at Central Park, who has excellent opportunities for watching the animals there, says that he has never found the apes sleeping upon their backs.

“We all know the usual disagreeable results of sleeping on the back. A person in sleep will often roll over flat, whereupon he or she sees strange sights and hears odd noises. Many a time I have seen mothers and nurses go to the child on its back, muttering or crying in sleep and then gently turn the dreamer over on the side. The right side is preferred by many people, while some find the left side comfortable. I do not know that it makes much difference. Some think that we should not lie on the left side, because it oppresses the heart and lungs and interferes with freedom of cir culation of blood and breathing.”

A mixture which is often prescribed and generally causes much trouble is one composed of:

Zinc sulphate, gr. viii.
Lead acetate, gr. xv.
Fld. ext. Krameria, ʒiss.
Water, ad ℥iv.

The way in which a pharmacist generally puts this up is by dissolving the salts in the water and adding the fluid extract. This causes an unsightly mixture in which the precipitate settles, and the light flocular matter which forms on the addition of the fluid extract rises to the top.

The proper way to make this is to dissolve the zinc sulphate in the water, then rub the lead acetate to a fine powder in a mortar, to which add the fluid extract‘ stirring *rapidly and constantly;* this will at first fsrm a smooth gelatinous mass, and on the addition of the zinc sulphate solution, a smooth mixture will be obtained, and not flocular and lumpy as in the first case; with the latter method the precipitate would slowly settle on standing.

ANOTHER METHOD OF UTILIZING A DRUG STORE.

By R. B.

A recent number of the Journal contained an article describing the experience of two foreigners in relation to drug stores in Boston and New York. Now, one thing which they had not the opportunity of finding out is, the way in which drug stores are often utilized by the public as storage warehouses.

For example: A learned follower of Æsculapius, may be busy putting up a prescription, when suddenly, he will espy what he supposes to be a prospective customer; he walks forward with a beaming smile wreathing his countenance, and with the expectancy of making a sale, when his expectations are rudely shattered by the query: "May I leave this package here for a few minutes, I am going to visit a friend, and do not wish to carry it with me." After the druggist has recovered from the sudden shock, he generally manages to articulate "Why, certainly, madam," and the chances are that her few minutes will be changed to a few hours.

I know of one particular case, which happened in a store in which I was clerking. It was in the latter part of December, 1894, that two young men came into the store and asked permission to leave their skates for a half an hour; (these were real metallic skates) it was about 9 P. M. when they left them, and naturally, I expected to see them return about 9.30, but at 10 o'clock they had not returned for them yet—to make the story short, those skate were lying around the store for fully two months before they were called for, and during that time our boy-of-all-work swore softly to himself whenever he had to put them out of his way.

One woman when she returned for a parcel which she had left, sweetly asked, "Are there any charges?" "Oh, no," said I, and was about to add, "This is no storage warehouse, but a drug store," but I thought it might hurt her feelings, so refrained from saying it.

GROWING OF CORK TREES IN THIS COUNTRY.

About thirty-five years ago several young cork trees were sent to Sandersville, Ga., by the Government and set out to test their adaptability to the climate. Three or four are yet living, the largest one being two feet or more in diameter. Recently it was stripped of its bark around the trunk, and samples of the cork 2½ inches thick were sent to Washington and to the Atlanta Exposition. It is rumored that the Department of Agriculture will in the near future issue a bulletin on the subject of cork advocating the culture of cork trees in this country, urging that forests of this species of oak could be established with great profit in the Southern States. Statistics show that $2,000,000 worth of cork is imported into the United States annually. It is steadily increasing in value, bringing now eleven times the price that was was paid for it in 1790. The soil of California is said to be particularly well adapted to the cork oak, the tree growing there with greater rapidity than in Europe. Already about 1,000 of these trees have been planted in the San Gabriel Valley. The University of California has distributed several bushels of the acorns, which, by the way, are very good to eat, tasting like chestnuts.—*Drug. Cor.*

Young Hopeful—Mamma, will Willie get shot if he goes to the war?

Mamma—He will be exposed to that danger.

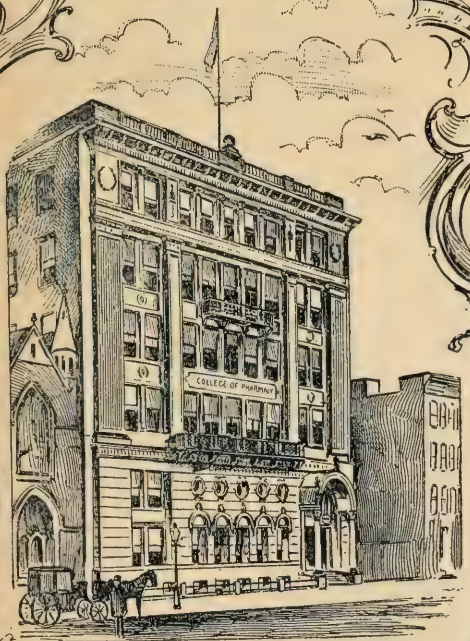
Young Hopeful—Oh, no, he won't. I saw him at the light infantry last night, and he marched in the back row, right behind a great big fat man.—*Detroit Journal.*

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. NO. 4.

April, 1896.



Contents:

THE BRIGHT AND DARK SIDE OF HOSPITAL LIFE, ... 73
By WENDELL C. PHILLIPS.

THE VARIOUS SYNTHETIC PROCESSES FOR VANILLIN, . . . 86
By Prof. VIRGIL COBLENTZ.

GIANT BIRDS OF AMERICA, . . 89

EDITORIAL, ... 91

ALUMNI COLUMN, . . . 92

ALUMNI NOTES, ... 93

COLLEGE NOTES, ... 96

SENIOR CLASS NOTES, . . 97

BOARD EXAMINATIONS IN JERSEY, 98

THREE STAMPS FOR A NICKEL, . 99

WHY THE CLERKS WARY, . 99

DYSPEPTIC ORANGES, ... 100

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . . .

"Auld Lang Syne."

The person who was unfortunate enough to become seriously ill was obliged to uncomplainingly ingest the vilest of decoctions and infusions, a silent but expressive shudder being the only protest possible. Since those days the patient has learned to demand more palatable methods of medication. ELIXIR LACTOPEPTINE now renders it easy for the physician to meet this reasonable demand, as it effectually disguises the unpleasant taste of unpalatable and nauseous remedies. The contained Lactopeptine also assists in the retention and absorption of other medicaments because of its well known digestive potency. The Bromides, Iodides, and Salicyclates should always be prescribed with ELIXIR LACTOPEPTINE as a vehicle.

Send for Samples.

The New York Pharmacal Assoc.
Yonkers, N.Y.

OLDEST STAND ON BROADWAY.

THE "ANIMAL EXTRACT CO.'S"

CARDINE, heart extract, for Heart troubles

CEREBRINE, brain extract for Epilepsy, Brain, Nerves, Hysteria, etc.

MEDULLINE, extract of Spinal Cord, for Locomotor-Ataxia, etc.

MUSCULINE, for Muscular Rheumatism,

OVARINE, for Diseases of Women, Sterility, Nervous Prostration, etc.

TESTINE, for Nervous Debility, Impairment, Impotency Exhaustion, etc.

THYROIDINE, for Obesity, Goitre, Skin Diseases, Myxoedema, etc.

☞ *Positively guaranteed as the only brand always strictly according to Dr. Hammond's published formulas. $100 forfeit if not.*

Dr. DECLAT'S PHENIC PREPARATIONS, for Cancer, Consumption and all Fevers.

Medals awarded, Paris, Lyons, &c. for Phenic Acid and Compounds.

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER
183 Broadway, - - - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, April, 1896. No. 4.

LIBRA
NEW Y
BOTAN
GARD

THE BRIGHT AND DARK SIDE OF HOSPITAL LIFE.

BY DR. WENDELL C. PHILLIPS.

Ladies and Gentlemen :—

I rarely ever commence to speak upon any one of the subjects upon which I lecture that I do not think of a little anecdote that is told of a young woman who was an organist in a church. She was a very young woman and unmarried, and in that church they had a very old pastor, and she was not so much interested in the old pastor, and the music didn't always go just right. Sometimes the boy that blew the organ did not do his duty. He knew better than she did when it ought to stop, and all sorts of things happened in that church. But one time there was a very fine young minister came to exchange with the old minister, and that day she was particularly anxious that the music should be good, and so she made special preparations and took every possible precaution that the music should be perfect that day. In order to carry out all of her ideas she thought that it would be a good plan to send a little note to the boy that pumped the wind into that organ, giving him some directions as to what he should do. She did so and handed the note to the old sexton, who was deaf and who didn't quite understand her, and he put it on the pulpit, and so when the young minister got to the church he found the note on the pulpit and it read like this : "You keep on blowing till I tell you to stop." Now you may have that experience with me to-night, if I do not get at my subject and commence to talk to you right away.

I suppose that to most people the question of hospitals is rather uninteresting, except to those who are curious enough to desire to know many things that go on inside of hospitals ; but there is a peculiar history to hospitals and one that to my mind is interesting and at the same time very instructive. You know that hospitals have not been brought to the perfect condition in which we find them now until a very recent date, although we have a history I believe of a hospital in Cæsarea as far back as the third century ; but in the fifth or sixth century—no, I think, it was in the seventh century—the first hospital was founded in Paris, the Hotel Dieu, which still stands, and has grown from time to time until now it covers, I think, about five acres of ground. The oldest hospital in America is the Philadelphia Hospital, which was established some time I think in 1742, and the oldest hospital in this city is the New York Hospital, which was established in 1770, although there had been hospital work before that time, which I shall speak of a little later on. But to give you some idea of the enormous number of people who receive treatment in the hospitals of this city I will just quote a few statistics from the 1892 reports, and in those reports you will find that the number of people who were treated in the hospitals, which are under control of the Board of Charities and Corrections, alone was about 40,000 that year, and as near as I can make out from careful study of the reports of other hospitals, about 30,000 received treatment in hospitals more or less controlled by private interests, and if you will add to them the 250,000 people who received free treatment in the dispensaries you will find that about one-quarter of the entire population of this city received treatment in the hospitals and dispensaries. You take that amount from the population of the city and then figure that there is one physician to about 600 and you will have about 150 of those 600 that get free treatment, and you will find that there are not a great number of people to each physician in this city. But a word now as to the expense. It costs about $4,000,000 to run the hospitals of this city, both public and private hospitals, in round numbers about $4,000,000. The hospitals under the control of the Board of Charities and Correction consume about 30,000 barrels of flour a year and that flour makes about 6,400,000 pounds of bread. Now some of you women know what it would be if you had to make all that amount of bread. But that is the amount of bread made in the hospitals alone under the control of the Board of Charities and Correction. But a point that may interest some of you young men more would be the fact that at Bellevue Hospital, in the Outdoor Department alone, they use about $20,000 worth of drugs every year, which is in that one hospital with its Outdoor Department about $20,000 to $25,000 of drugs. So you can get an idea of what the people are getting in a city like this.

Now, if we have the lights turned down I think we will commence to show some of the pictures. I have a large number of pictures to show you, and I must hasten in order to get through with them within the time allotted to me. I am going first to show you a picture of the famous old institution down in Twenty-sixth street, known as Bellevue Hospital. This is one of the great institutions of this country—this building which you see here. It was established in 1806, but it was the outgrowth of some hospital work begun between 1650 and 1700, and at that time, in 1685, I think, but I am not sure of the date, the population of the city was 1,000. An enormous city, wasn't it? 1,000 population! But just see how the city has grown. In 1731 there was an epidemic of smallpox in the City of New York, and the people were aroused to the necessity of having some place to put those who were attacked by the disease, and they built a hospital down where the City Hall now stands, and it had five beds. That was a great work done at that time. A hospital was established with five beds! But in 1806, DeWitt Clinton was made Mayor of the City of New York, and he started to make some reforms along this line (I suppose he was a reform Mayor), and they bought a piece of land in the locality where Bellevue Hospital now stands, in the locality known then as "Kipp's Bay Farm," and it took in that section of land bounded on the West by Second avenue, on the North by Twenty-eighth street, on the South by Twenty-sixth street, and on the East by the East River; about six acres of ground, and they paid the enormous sum of $35 an acre for it. It is worth almost $35 a square foot to-day. Now there was more wisdom and sagacity in making such a good real estate investment. The first hospital built was the main building that you see here in the center. That was the first building. It was put up in 1806, and that served not only as the Charity Hospital of the city but it was also the alms-house, the penitentiary, and it served for a workhouse for those who had to be sent to such a place. Now they have put on these enormous wings, and aside from this there are six pavilions and two chapels, besides the Morgue and a whole lot of other buildings added since that time.

Now this gives you a little idea when you compare the growth of that hospital down near City Hall with five beds, and then look at what is done in this hospital, where they treat from 15,000 to 17,000 internes alone every year. You can get some idea of the growth, not only of the city, but of sickness and those who need charities in a city of this kind.

Now there is a picture of a stretcher, and we often say when we see a person being carried on a stretcher, "See that poor fellow on a stretcher." But it was a wise Providence that led some one to invent the stretcher, for if you had to be carried upstairs from one ward to another by two attendants, one taking hold of your shoulders and another your feet, and neither of them keeping step, probably, and then be carried on a stretcher, you would find that the comfort of a stretcher was very much greater than any other way; and it is the most humane way probably of carrying a patient from one ward to another.

I will now show you a picture of Bellevue Hospital, out on one of the fire escapes, down near one of the wards, and these are children that are out there sunning themselves. People sometimes think it is a terrible thing to go to a hospital, but I don't think those children look very unhappy. They look fairly happy, except this little one. She would, only the sun was shining in her eyes and made her look rather unhappy. But you see the nurses taking care of them, and it is said by those who are in charge that not only the children in Bellevue but in all other hospitals, especially the Hospital for the Ruptured and Crippled, where there is a large number of children, that they never cry but twice. The first time is when they are coming in, because they have to come and don't know what they are coming to, and the second is when they have to leave the hospital and these comforts and go back to homes where, perhaps, the comforts and the supply of food do not compare with what they get in the hospital.

We will pass from this to another picture not surrounded by so many comforts These are cells—the alcoholic cells—where the poor fellows who are overtaken by too much indulgence in strong drink are finally delivered into the hands of the strange tormentors that torment people in that condition, and they are landed down here in cells. You will find them in all sorts of shapes and conditions, just getting over attacks of delirium tremens.

But we must hasten. I want to show how some of the work that is done. This picture brings to mind some of the advancements in surgery during the last few years. Those of you who are living in the last years of this century are living in the greatest 25 years that have ever existed from the commencement of the world; and just think what has happened since this old hospital was established in 1806. When that hospital was established there was no anæsthetics, when that hospital was established there were no antiseptic measures used for its prevention of poisoning from gunshot wounds, and oftentimes, even within my own remembrance as a physician, I can remember they thought they had reached the climax of antiseptic surgery when down in Bellevue Hospital they arranged a little tin basin to put under an injured leg to catch the pus when it dropped. Now just think of that compared with the antiseptic dressings we have to-day.

Now you see these children here are bow-legged children or knock-kneed. The one you see here first is bow-legged and you see the same child up there down here. This is his appearance after the operation as he is about to leave the hospital. You see his legs after they have been straightened out. You see how much stronger and firmer he looks. Just think what has been done in surgery during the last fifty years! Is it possible that advances can be made? Is it possible that the achievements which we are to teach can compare with those we have reached, can compare with those great things that have been done during the fifty years just past? Think of the suffering saved, and of the hundreds of thousands of lives saved because we know how to save them. In those days it was considered that a compound fracture of the leg was fatal. It was fatal in almost all instances. To-day we never expect to lose a compound fracture. Those lives are all saved.

But we must hasten. This takes you up into the amphitheatre of Belleve Hospital, and oh, what a tale could be told if the walls of that old amphitheatre could tell all the things that have happened there! It is the place where almost every medical man reaches some time in his life. He paces these corridors and finds his way into the amphitheatre of Bellevue Hospital. Some of the famous surgeons of by-gone days have done their most famous work standing in this room of which you see a picture before you. Many of you who are physicians, and some of you who are students, will recognize the face of the famous surgeon who stands in that picture. I would like to mention his name, but in order to get that picture at all I had to promise I would mention no names. This man is a very famous surgeon, who is explaining the steps of an operation in orthpœdic surgery, and he is about to have the patient brought in. It would be a grand thing if the walls of that institution could speak; if what has happened within the walls of that institution could be written; the stories of those who go in there. What a book, if published, it would make; and how many strange things would happen if we knew or could know to-day all that has ever transpired in that great institution. Those walls are often ringing with the cat-calls and wild-hoots of the medical students; yes, they have got as many as pharmacy students, and also with the groans and moans of those who have had to undergo those fearful and frightful operations, especially before the days of anæsthetics. But they have also rung with the pains and praises of those who have been brought from death to life praising those who have given their services and devotion in order that their lives might be saved.

Now you see here the picture of an ambulance. The word ambulance is from the Latin word *ambulo*, which means to walk. It means a moving hospital, a walking hospital. They were first used by the French during the Napoleonic wars, but they were very crude affairs, which followed after the armies and tried to do something for those who had been injured. But it was Yankee ingenuity that brought the ambulance to its present perfection during our late war. Now you must remember that that is only about thirty years ago, and it was not until 1870 that Bellevue Hospital had an ambulance at all. But to go back to the days when there were no ambulances, no hospital corps; when nothing was done on the battle-field for those who received injuries and wounds. Just think of the horrible torture and suffering that must have been endured by the poor soldiers left on the battle-field when the army moved on; one poor individual injured trying to aid and sustain another, who had perhaps received almost the same injury and left there on the battle-field to die. But this ambulance as you see it here is the perfection of ambulances. Just think how many times you see them in this city every day, and hardly stop to think of their history and what they do. It is so easy to get an ambulance. About all you have to do is to "push a button" and the ambulance "does the rest." The ambulances in this city respond yearly to about 7,000 calls, and you can get one by going to any police station. I am not sure about the fire alarms, but you can at the police station. You see one here. The ambulance surgeon is supposed to put any fracture or injury of any kind into fair condition before he takes the patient to the hospital, where the final dressings are put on.

Now we are in another part of that location down there in East 26th street, and I am showing you now a picture of the interior of the Morgue — that is, the old Morgue—the interior. You see those rough pine boxes piled up here one upon the other. Inside each of those is the body of some person who has died and been left without any friends. You would hardly think so, but there are about 7,000 to 10,000 people die in this city every year with no one to claim them—from 7,000 to 10,000. Superintendent Blake, of the Outdoor Poor Department, states that in his opinion there are 100,000 people in this city all the time, walking up and down these streets with no place to go when in health—no home, no friends—simply that tramp, tramp, tramp of the tramp going through this city all the time. About 10,000 of them die every year with no one to claim them. Most of you are aware of the fact that the bodies of these people who die in these institutions and in various places are used for dissecting purposes in the colleges. They keep them in the Morgue a certain number of hours or days, and then if no one claims them they are either photographed or some identification made, their clothing saved, and then they are sent to the different colleges for dissecting purposes. In the summer time, when the colleges are closed, the bodies are sent to the colleges just the same. At most of these colleges they have enormous great vats with salt water in them, and they throw the bodies in and keep them until the fall time comes again. (Laughter.)

Now I am going to show you a picture of another wagon that you see once in a while in the streets. It is known as the "Black Maria," only it happens to be a "White Maria" in America. They have painted them white here, but in some of the old countries, England for instance, they have been painted black and received the name of the "Black Maria." Now, that wagon goes around to the police courts and to the station houses and picks up the criminals and those that have been sentenced, and they carry them down to the foot of East 26th street, where they put them on a boat and they are sent up to the "summer resort" on Blackwell's Island.

Now we have left the foot of East Twenty-sixth street, and going up the East river we come to the first building on Blackwell's Island, which is now known as the City Hospital. It used to be called the Charity Hospital. It is about on the same footing as Bellevue Hospital, doing about the same work, and the care is about the same in every way as given in Bellevue.

We will now take one or two squints into the interior of this hospital and I will first show you a ward for convalescents—that is the convalescent ward. These men have been there some time. They are nearly all well of the ailment which they had on entering, and are about ready to go home. They are able to sit up and play games, and they wait the time to come when the physicians tell them they can go home.

Now I will show you another kind of a room. This is a ward not for convalescents, but a ward for incurables. These old women you have seen here have been pronounced incurable, and when that time comes they are sent into this ward. They are just waiting for the time to come, when they will be released from their sufferings by death.

We will hasten on to another building. You see here a building and a number of tents up. Now it has been proven that many diseases are better treated in the summer time in tents. Typhus fever, typhoid fever and many other diseases are better treated in the summer time in tents. So that a large number of these tents are put upon Blackwell's Island, in order that patients may get outdoor treatment.

Now we will take a look into the interior of another ward for incurables in one of these buildings. The doctors are making a diagnosis of a case on the other side of the room.

I think there are one or two other pictures quite similar to the one you see here. This is also a ward for incurables. It is a part of the little pavilion over on the Island. I noticed when I went through there, for these are photographs that were taken, most of them by myself and a friend who went with me-I noticed when I went into one of the wards for incurables for men—it was just a little before election time, and I spoke to the doctor, whom I happened to know, and who went through with me. I said, "These men don't quite look to me as though they were incurable." He said, "No," but they will be incurable until just before election, and then they will be sent down to the city to vote the proper ticket.

Now here is a building that does not look like any of the buildings here. You notice the windows are very small, with strong iron bars going across from above downwards and crossways, so that a human being cannot squeeze through the windows. This is a picture of the Penitentiary on Blackwell's Island, the home for thieves and thugs, and murderers and ward heelers, and ex-aldermen (laughter), and sometimes political bosses. There is a room up there which they will point out where one famous political boss spent the last days of his life. Now that Penitentiary accommodates 2,100 prisoners and it is generally full. 2,100 prisoners spend their time there; and what is very peculiar about a prisoner is that if he is a prisoner once, he is generally a prisoner the greater part of his life. Now I never could see any great enjoyment in a life of crime. I have never tried it, and do not think I shall ever try it, because a prisoner generally spends the most part of his life in prison and at hard labor. I just happen to know of a person who thought he would rather steal than work, and he stole a pocketbook from a woman. The book had 25 cents in it. He was caught and sent up for three years, and on good behavior he released I believe, in about three or four or five months less than that time; and after he got out he was a citizen for three days. He did the very same thing again, and he was sent up for six years. That man is going to to have about six years of punishment for three or four days of liberty. I don't see how they get any enjoyment out of that; but still, it seems to be the life that they care to live.

This was a snap shot taken in the celery beds up there. Now it is not all comfort you can see up in the penitentiary; but I will show you some other pictures.

There they are in full uniform. They seem to have a fondness for stripes rather than checks. You see them going to and from their work.

Now we have another picture, which is the best picture of the lock step I have ever seen. It was hard to get, because if you go and ask to take photographs of the prisoners you are not allowed to do it. But as we were going home we saw a gang coming and we waited until they got near and we had a fine snap shot arrangement and we snapped it at them. You can see the very step and one leg just meeting as though it were going to fit right where the other one had been. You can tell it almost always. You can tell it on a man even if he is alone, and it is said that clever detectives, even if they do not know a man has been a prisoner, can tell it by his walk. They even get the walk of a prisoner after a time—the walk of a criminal.

There is a picture of a Charity Hospital nurse, with a tendency to smile, and at the same time she was quite pleased to have her picture taken. That is in one of the wards of the Charity Hospital on Blackwell's Island.

Now we pass away from Blackwell's Island for a little time and come to a picture that many of you are familiar with and that is the grand Insane Asylum on Wards Island. (laughter.) I mean you are familiar with on account of having ridden by it so many times on your way to Glen Island in the summer. (laughter.) That is a picture of one of the largest buildings in the State, but not to be compared with some of the State hospitals, especially the one at Ogdensburg. This building has been used for males alone, but recently there is another building on the same Island where they have taken some female insane patients. Now you know that just within a few weeks the care of the insane in the city of New York has passed over to the State. Formerly we had the pleasure of taking care of our own insane people, and at the same time paid taxes to the State; but we now have sense enough to throw the burden onto the State, and it will be better done, I am sure, than in the past.

But just think of the difference between the treatment of the insane people to-day and that of a century ago. Why, it was only in 1736, in the reign of George the III., in England, that the laws governing the killing of those who were insane were repealed. But those laws were not repealed in England until they had murdered 30,000 insane people, in France 20,000 people, and even our own country is not altogether free from a burden of that kind, as you will recall the history of our own Salem a great many years ago. Now we look upon insane people entirely different than we did in those days. Let me tell you some of the deeds they did in England in some of their insane asylums during those early days. Now it was considered that an insane person was a vicious person. That was their explanation of insanity. It was viciousness. So they used to dig a great, big, deep well, and in the bottom they put all sorts of snakes and reptiles, and they would take these insane persons and drop them down among the reptiles and draw them up and down again many times. Then they used to have great circular swings and put them in these circular swings and run them around as fast as possible, and all sorts of tortures of that kind ; and it was stated that the doctors of those days considered that kind of treatment very beneficial to the patients.

Another thing that will give you a little idea of the horrible torture that these people were subjected to is this. It is the case of Noyes. It is on record ; any of you can look at it. It happened in one of the asylums of Great Britain. He was a peculiarly vicious insane patient—probably subject to chronic mania—and was very troublesome. They took him down into a dungeon, way below the ground, where he only had room to get up and lie down, and up on the wall was an iron standard set up against the wall and fastened to the wall, and around his body was put an iron band. To this band was one link attached, and that link was attached to the standard, and when he wanted to lie down he would slide the link down the standard and lie down, and when he wanted to get up he would have to slide it up. He was never released from that position for twelve years. You can get an idea of the care given to our insane people as compared with what it was then. What has been the result ? From what has this change come ? It has come from this. We have come to recognize insanity as a disease, not as a vicious characteristic. It is a disease and these people must be treated as sick people. They are sick people and they should have that kind of treatment. We do treat them that way, and as far as it is possible we give them good food, the best of care, and all of them outdoor exercise. Why, if you take a ride in Central Park any day you will see from ten to fifteen to twenty insane persons riding in carriages. You are not aware of it. They ride in carriages. They are allowed to go out.

But let us take a look at a few of them. Those are insane women on Blackwell's Island, out for their afternoon outing. They are taking a walk with their attendants, and they are allowed to walk and run and romp and do almost anything they like.

I remember a very strange feeling came over me as I went to the Hospital on Ward's Island and with two or three of the physicians was sent out into one of the back yards, where there were about 100 men, and they were allowed to talk with us, and I turned around and found the doctors had all left me and I was in there alone, and I began to think it was about time I was moving on. I did move on.

There is one peculiar thing about insanity. It changes the whole tenor of one's way. That is to say if a person who is very pious when he is in his normal condition, should become insane he becomes one of the kind that will swear and rant, and one of the most wicked of people ; but you take a man who is naturally wild and irreligious and let him become insane, he generally wants to pray all the time.

Now let us take another picture. That is a picture of an insane boy—or man he is now—up on Blackwell's Island, and it only shows a type of insanity. Now that boy harnesses himself up every morning with this harness and this wagon and he works around the Island all day long. He unharnesses himself at noon and has dinner and afterwards harnesses up again. Now he calls himself a horse. He thinks he is a horse, and to all intents and purposes he is a horse. So that he has earned the name of "Johnny the Horse." He has been there a long time and is quite harmless and everybody that goes to Blackwell's Island asks to see "Johnny the Horse." He is one of the sights.

Now that is a picture of the Almshouse on Blackwell's Island. In passing through the streets many beggars ask you for money to buy something to eat. They ask you for alms. Now you can always say, "My good friend, you don't need to go hungry in the City of New York. The city provides places for such people as you." Now if I had no home, no shelter and no food, I consider that I would be a truer man to go to the proper authorities and be put into a place like this than I would to belittle myself to stand on the streets and beg of those who went by for something to eat. Of course these people up there—I don't suppose the bill of fare is anything like Delmonico's or the Waldorf, and I don't suppose they have quail on toast for dinner or the delicacies of the season; but they have enough to eat and they have a fairly good bed. I think most of them have it a great deal better than they had before they went there. But here is a place where they can be sent to if they are in absolute need.

Now we will take a look upon some of the people who go there. This is a picture of the same building. You see some of the old women out with their sun-bonnets on. It was a very peculiar sight to me to pass along and see these people, some of the old women with their snuff-boxes and pipes, and they were smoking and having a good time and they seemed to be enjoying life a good deal. Some of them didn't care to have their pictures taken and drew their bonnets over their faces, but I induced some of them to let me take their pictures.

There is a picture that is still further up; that is the final resting place of the unnumbered dead of the City of New York; that is the Potter's Field, on Harts Island. There are about 10,000 people buried there every year, and they dig long trenches, and any of them who are buried whole of course they have room enough; but in most cases their bodies are sent up after they have served their purpose in the dissecting room before they are sent there.

Now we will come back to the city, and this is a picture of the interior of the Carnegie Laboratory where all the experiments were made at the time of the last cholera scare. Now we will just take a look that will give you the position of the physician when he is making an examination with the microscope for some of these germs. You will see he has got the test tubes here and all the cultures, and he is just making an examination.

But we must hasten on because there are a number of pictures I wish to show you still. This is a picture of the Babies' Hospital, over on Fifty-sixth street, and Lexington avenue. There are two hospitals in the city besides the Charity Hospital, but they are under private control, where they take young babies under, I think, two years of age. Most of the hospitals will not take children under two years of age; but these two, the babies' ward of the Post Graduate, and this at Fifty-sixth street take children under two years of age. You can, of course, send them up to the nursery on Blackwell's Island, where they have young children under two years of age. But most of them come here and into the babies' ward. I will show you a picture of the interior. Here you see where the babies have their cribs and little rocking horses, and the nurses taking care of them, inside of one of these rooms in the Babies' Hospital.

This is another room in one of the hospitals of the city, the cooking room on the top floor of the Manhattan Eye and Ear Hospital. I will show you one or two other pictures of the children's ward of the hospital. You see some of them have had operations upon their eyes; others upon the ear, nose or throat, and they are in here for cure after these operations. This is a picture of the operating room in the Manhattan Eye and Ear Hospital, with the head nurse attending.

Many of these photographs I have had taken myself, others I have procured wherever I could get them.

There is a picture of a woman who is ill with consumption, and I throw it on the screen that I may call your attention to one fact in connection with consumption, and that is that we are trying in this city to stamp it out ; and I want to say also that the care that has been given by the Board of Health during the past three or four years has lessened the death rate of consumption nearly 1,000 a year. It may seem an incredible thing, but in Europe about a million people die of consumption every year. In the United States in, 1890, 91,000 thousand people died of consumption. In the City of New York in that same year over 6,000 people died of consumption. About one-quarter of all the deaths in the world are due to consumption. Now, if as many people as that died of cholera or smallpox, why the newspapers would be just wild with indignation, and protest after protest would be made by the people ; and yet here is a disease going on all the time and carrying off hundreds and hundreds more people than any of the diseases above named, and yet we have very little to say about it. When we come to think that consumption is due to a germ, and that germ is contained only in the sputum, and that it the sputum could be destroyed before it ever has a chance to become dry, it would only be a question of time before we could stamp it out of the country. But if the sputum is allowed to become dry and pulverized and get into the air, then germs are liberated and absorbed into the system and spread the contagion. If we could only destroy the sputum ! We used to think people inherited consumption. That theory has gone by. You cannot inherit disease very well. Disease does not belong to me or to you, and it is not going to be propagated except in very rare instances, and especially in consumption. I don't think people ever inherit consumption.

But you can inherit a tendency to disease, and you can inherit certain family characteristics. If your father or mother had a big nose you may have a big nose too, and if they had little noses you might inherit a little nose; but to inherit disease, I do not think you do—not to any very great extent. This woman you can see with all these coverlets and all those things around the room. If she was careless about destroying sputum the room is liable to be contaminated. There are two or three things we must do in this country. One is to show the people that they must not expectorate upon the floors of public buildings or street cars or stores, or upon the floors of their own houses. That is one thing that must be stopped, and I see that some of the street-cars last week have put up an order of the Board of Health forbidding expectoration upon the floors. We must help them. And if we could only teach people who have consumption in their homes to see that the sputum is completely destroyed, it would not be very long before the death rate would be very greatly reduced. It is being reduced very rapidly in some of our larger cities. New Haven and Philadelphia have gotten further along than we have, but in our own city we are reducing the death rate now very rapidly from consumption.

There is another way that shows you how it may be propagated. Here is a consumptive. He is not able to go to his work. I suppose he had to stay at home and his wife perhaps had to go out and work and he takes care of the little children. Now, if you let that man be careless and expectorate upon the floor or in various parts of the room, and no great care taken for the destruction of the sputum, the little one is almost sure to become contaminated with the disease.

Now there is a picture that will give you a little idea of the enormous numbers of bacteria in the world. Those are little particles of dust that you see here. This little stick that you see here looks like a long stick of wood. That is a little particle of dust that you see on the rays of the lantern going to the screen. There is another little piece of fibre of wood, and up there is another little particle of sand. Here in the center of that is a little fibre of sand. Now these were developed, that is, they were put under proper conditions for the development of bacteria, and after four or five days they were picked up and magnified, and around this little particle of sand you see this great colony of bacteria had formed. Four different colonies have formed on this little fibre of wood, one colony here, one here, one here and one there, and on this little fibre four others had formed, all different kinds of bacteria, had formed upon that little piece of wood, that is any ordinary dust. It is fortunate for humanity that most kind of bacteria have no affinity for the human being; that is, they become destroyed if you breathe them in; but, of course, some of them do not. We have bacteria for consumption, bacteria for typhoid, for typhus, for cholera and a good many other diseases; but for most bacteria, the human body has no affinity, so that they are almost inert in most instances.

Now, there is a picture showing you—and I tried to tell you a little while ago that consumption was not inherited ; it is infectious or contagious. To prove that to you I will show you some sections in one of the wards in Philadelphia. Wherever you see those black spots they are consumptive centres; they are centres for consumption or tuberculosis. Just see how it thrives ! Here is a location where there is consumption. Here is a location where there is none. There is another. Down here a whole block with only one centre of consumption in it. But look up here how it runs along, and you can see that it creeps from one place towards another, and that these buildings have become contaminated ; and you can tell consumptive centres in various parts of the city, and it will only be a year or two now when you can tell where consumption has been epidemic, where it has been going on for years in certain places. And now you may not know it, but we are obliged to report to the Board of Health all cases of consumption after death, and after death the Board of Health go to the tenement house or wherever a death has taken place, and they paste a notice on the doors of those rooms, saying, "These apartments are not fit to be occupied until the landlord has complied with the requirements of the law and has put them in proper renovation by destroying all germs." Now, that is done in this city to-day.

There is a picture of the tubercle bacilli—a picture of the bacilli of tuberculosis. Now, some countries have gone further than we have in the question of the care of consumptives. We ought to have some great national institution that would take charge of consumptives, take them away from their surroundings to country places, where all the proper conditions can be fulfilled. Of course we have two or three buildings—I believe the new St. Luke's Hospital has a consumptive ward or a certain number of wards for consumptives, and I believe there is also an institution in Fordham that takes consumptives. But here is what has been done in other places. This is the Royal National Hospital for Consumptives on the Isle of Wight. They keep them there and a great many of these lives are saved. We must remember that a great many people who have consumption never die of it. They get well. It is found on post mortems that about 95 per cent. of those who have died from other diseases gave indications of having had consumption at some time in their lives.

There is a picture of a trained nurse in full uniform—and it is an occupation that for any young woman I think is a worthy one if she has got to support herself, because it means fairly good support and at the same time a fairly good remuneration. It is overdone, the same as medicine is overdone. I suppose all these professions are overdone, unless it is the profession of pharmacy.

Now I have a picture here—I hope you are not too familiar with this building. This is a picture of the Tombs, down in Centre street. There is a building that if it could tell the happenings within its walls, what great romances and what great stories would be given to the public press of the world! A wonderful old building and wonderful are the scenes that have transpired within its walls. But let us look at the interior. Here is a cell where young boy criminals have been sent up for ten days for minor offenses. You see they have been arraigned here and the Tombs "angel" has commenced to do something to try and reclaim these boys. I suppose she is sometimes successful. She is a woman of wealth and gives her time to try and reclaim these little fellows that get into the Tombs for a few days for minor offenses. Now she may be successful in some cases, but as a rule until he becomes a man he generally keeps coming up for ten days now and ten days again, until we find him in the class of men we shall see as we throw the next picture on the slide. Here you find the older men. They have been up for ten days all their lives generally, and yet the work of reform still goes on, and they are still striving to do something to reclaim them.

Sunday afternoon services in the Tombs. You don't see the prisoners because they are in their cells, but the service goes on and they listen from the doors of their cells.

That is another service that is going on in the ten day pen similar to the one you saw a minute ago. These are all pictures from the Tombs. This is where the Sisters are carrying on a service for the reformation of some of the young women criminals that you see down there.

Now we pass away from the Tombs to a little pleasanter picture, and this picture represents one of the very sweetest charities I think that are established in our city; that is the Day Nursery, so called. The woman who takes her child to the Day Nursery is usually a woman whose husband has either died, been taken away from her suddenly or has suddenly decamped and left her with these young children, and she is obliged to support them. She can take her young baby to the Day Nursery and by giving and by giving five cents to the people who run it, the child gets a good bath, all of the milk it wants to drink, food if it is old enough, and is cared for and amused all day and then at night the mother gets her child, for she has earned her day's wages of $1.25 or $1.50 to support her family. These are the charities which are done by the women of this city, who feel the necessity of doing something to help those who are not so fortunate in life as they are. It is a great, wise and good charity.

This is a picture of a little kindergarten, taken in a mission church of this city.

Of course, I haven't shown you the pictures of all the hospitals. If I should, it would take all night to get through. There are the the New York and Presbyterian, and all the other enormous hospitals in the city which you know very well.

There is a picture of one of the Fresh Air Homes, taken in the dining room.

Working the growler. You see the point, and it is quite intelligible here in this growler gang that the oldest man in the crowd has the can. He has been there a good many years and he knows, of course, what is best.

In this picture you see a little bootblack is having his own shined now.

That picture is not a fancy's dream at all. That is a photograph that was taken on Howe & Hummell's steps one Sunday, down in Centre street. Of course, it does look horrible to see a drunken woman, but when you come to simmer it down, it is not very much worse than a drunken man. But the hope, I think, of the American people, is in the soberness of its women. You go to London and you will see women walk right into grog shops and go up to the bar and drink. You don't see that in America, and I believe that is one of the strong points of this country. You don't see that kind of thing here.

Here is a picture of a ten cent lodging house at 11 o'clock at night—one of these lodging houses down in the Bowery. See the lodgers. Here is one row of them up here, and another down here, with their feet hanging out and arms hanging out in every direction. But there is not a boy in that crowd. They are all men of about fifty years of age or over, and I suppose it would be just simply impossible to come anywhere near hitting the number of bacteria present in one of these places, and not only the lower forms of animal life like bacteria, but some of that are larger and are visible to the naked eye. What could ever happen to any man at fifty years of age to bring him to a point where he would have to live under the vile conditions that these men are living in down there. It is not necessary to say that when a man gets to fifty years of age, if he has no friends, there is nobody to blame but the man himself. He is to blame. We all have friends if we keep them, and there is something wrong entirely, absolutely, radically wrong in a man that has to live in this condition. I am going to tell you what puts them there in nine hundred and ninety-nine cases out of a thousand, and the cause of it can be spelled with a word of three letters, R-U-M.

Here is a little ice cream vender down in City Hall Park. You see the boys buying their penny's worth of ice cream. I suppose they got it on a piece of brown paper.

I showed that picture one night down in Oliver street, in the public school. I did not know myself what the picture was at that time. I knew it was a museum somewhere and the boys began to say, "There's Beefsteak John's." It was the museum you see as you go down on the

Elevated to the City Hall, on the right hand side—a dime museum.

Now there is a picture that looks funny and yet it is pathetic. That is a group of little children who are posing for their photograph. That is the way they pose down in Thompson street. They don't go to photograph galleries and pay $12 a dozen for their photographs; but they have curly hair and they have nice features just the same, when they are not dirty.

Now that is a picture of Battery Park and Staten Island in the distance. I am showing you these pictures to rest your eyes a little after looking at the hospital pictures. I never see that picture down there at the Battery Park, with Castle Garden, that I do not think of the story of the Irishman that came over. He was heard telling some friends of his experience. He said, "They took me to Castle Garden and faith I could see no castle or garden there."

There is a summer scene up in Central Park—the Lake up in Central Park, and if you will watch it you will see it change from a summer scene to a winter scene. (Applause.)

Ladies and Gentlemen—I feel as though I owed you an apology for taking so much time with this lecture; but it is some two years since I delivered it and I have had to deliver it absolutely without notes, and my memory is not quite as good as if I was giving it very often. I thank you for your very kind attention.

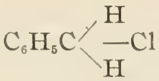
Effect of Alum in Bread.—According to Bigelow and Hamilton (*Hygien. Rundsch.*), bread containing alum or aluminum hydrate is less completely digestible than pure bread, and the presence of phosphate of aluminium renders bread still less digestible. The 10 or 12 per cent. of albuminoids digested in the presence of the two former aluminium compounds seems to become quite insoluble when there is an equivalent quantity of the phosphate.

THE VARIOUS SYNTHETIC PROCESSES FOR VANILLIN.

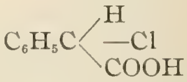
By Prof. Virgil Coblentz.

(*Continued from March issue.*)

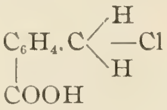
Closely related to the process of Messrs. Boehringer is that of Majert, in which benzyl chloride is replaced by phenyl-chloro-acetic acid or chloro-toluic acid, these two differing from the former in that they contain an additional CO_2 group; thus



Benzyl chloride.

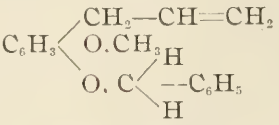


Phenyl-chloro-acetic acid.

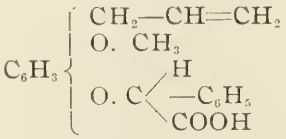


Chlor-toluic acid.

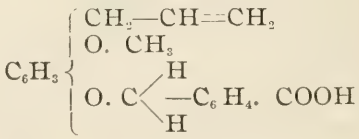
By the action of these chlorides on eugenol sodium, eugenol ethers are formed, these being analogous to benzyl eugenol (Mch., p. 58); by the the action of alkalies these ethers are converted into the *iso* compounds which on oxidation and subsequent saponification yield vanillin. The following formulæ give a general idea of the relationship of these three source products of vanillin:



Benzyl eugenol.

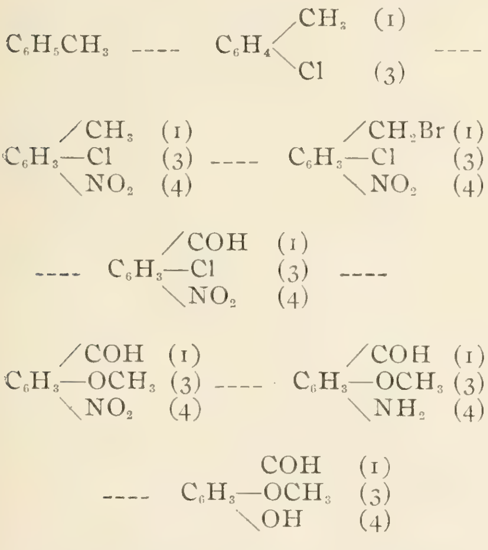


Eugenol-benzyl-acetic-acid.



Eugenol-toluic-acid.

Thus far, the various processes mentioned here depended upon the oxidation of an aliphatic side chain group in the mother substance to yield an aldehyde group, while the hydroxyl and methoxy groups were already in their proper position in the original substance. Landsberg devised a process in which a simple crude material was selected in toluol, which was successively converted into *meta*-chloro-toluol, nitro chloro-toluol (1, 3, 4), nitro-chloro tolyl bromide (1, 3, 4), and nitro-chloro-benzaldehyde (1, 3, 4), this latter compound being converted by the action of a methyl alcoholic solution of a caustic alkali, into *para* nitro-*m*-methoxy-benzaldehyde, which through reduction of the nitro group, diazotating and boiling the resulting amido compound yielded vanillin; the various phases being represented by the following :



$$C_6H_5CH_3 \;\text{----}\; C_6H_4\begin{array}{ll} CH_3 & (1) \\ Cl & (3) \end{array} \;\text{----}$$

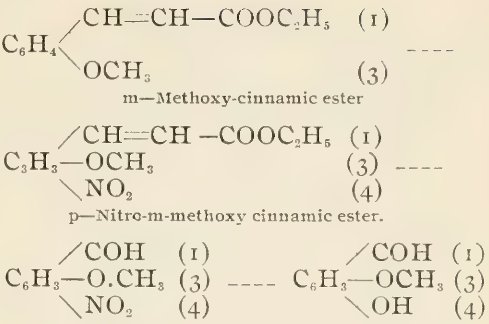
$$C_6H_3\begin{array}{ll} CH_3 & (1) \\ Cl & (3) \\ NO_2 & (4) \end{array} \;\text{----}\; C_6H_3\begin{array}{ll} CH_2Br & (1) \\ Cl & (3) \\ NO_2 & (4) \end{array}$$

$$\text{----}\; C_6H_3\begin{array}{ll} COH & (1) \\ Cl & (3) \\ NO_2 & (4) \end{array} \;\text{----}$$

$$C_6H_3\begin{array}{ll} COH & (1) \\ OCH_3 & (3) \\ NO_2 & (4) \end{array} \;\text{----}\; C_6H_3\begin{array}{ll} COH & (1) \\ OCH_3 & (3) \\ NH_2 & (4) \end{array}$$

$$\text{----}\; C_6H_3\begin{array}{ll} COH & (1) \\ OCH_3 & (3) \\ OH & (4) \end{array}$$

Ullrich (1884) patented a method for the production of para-nitro-m-methoxy-benzaldehyde, which is used in the above process, he, however, starts out from *meta*-methoxy-cinnamic ester, converting it into *para*-nitro-m-methoxy-cinnamic ester, which on oxidation yields *p.* nitro-*m*-methoxy-benzaldehyde, from which vanillin is obtained as already explained, thus :



$$C_6H_4\begin{array}{ll} CH{=}CH{-}COOC_2H_5 & (1) \\ OCH_3 & (3) \end{array} \;\text{----}$$

m—Methoxy-cinnamic ester

$$C_3H_3\begin{array}{ll} CH{=}CH{-}COOC_2H_5 & (1) \\ OCH_3 & (3) \\ NO_2 & (4) \end{array} \;\text{----}$$

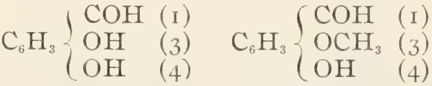
p—Nitro-m-methoxy cinnamic ester.

$$C_6H_3\begin{array}{ll} COH & (1) \\ O.CH_3 & (3) \\ NO_2 & (4) \end{array} \;\text{----}\; C_6H_3\begin{array}{ll} COH & (1) \\ OCH_3 & (3) \\ OH & (4) \end{array}$$

p—Nitro-m-methoxy-benzaldehyde. Vanillin.

In the various processes thus far mentioned, the aldehyde group is introduced by oxidation, or other processes, into the benzene nucleus. Since benzaldehyde is readily produced this has been selected by Messrs. Meister, Lucius & Brüning as material for production, introducing the necessary hydroxyl and methoxy groups. Meta-amido-benzaldehyde (a derivative of benzaldehyde) is converted into a diazo compound which on boiling yields *m*-oxy-benzaldehyde ; this is nitrated and methylated, giving *meta*-nitro-*m*-methoxy benzaldehyde, which is converted into vanillin as explained above.

Another class of syntheses start out from protocatechuic-aldehyde, of which vanillin is a direct derivative, through the introduction of a methyl group.



$$C_6H_3\left\{\begin{array}{ll} COH & (1) \\ OH & (3) \\ OH & (4) \end{array}\right. \qquad C_6H_3\left\{\begin{array}{ll} COH & (1) \\ OCH_3 & (3) \\ OH & (4) \end{array}\right.$$

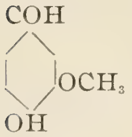
Protocatechuic Aldehyde. Vanillin (methyl-protocatechuic aldehyde.)

This process of the introduction of a methyl group in protocatechuic aldehyde was first patented by Bertram (1890) who laid out the following rules for alkylating :

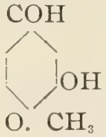
1. Vanillin is formed when the methyl group replaces the hydrogen of the hydroxyl which stands in the *para* position to the aldehyde group :
   a) in methylating dimetallic salts of protocatechuic aldehyde ;
   b) in methylating mono-acetyl deriv-

atives of protocatecehuic aldehyde.

2. Isovanillin is formed, that is when the methyl group replaces in the hydroxyl occupying the *meta* position :
   - *a*) in methylating mono-metallic salts of protocatechuic aldehyde.
   - *b*) in methylating di-acetyl compounds of protocatechuic aldehyde.



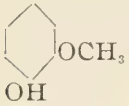
Vanillin.



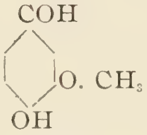
Isovanillin.

Homologues of vanillin may be prepared after this process, in which an ethyl group is introduced in place of a methyl.

Another class of vanillin syntheses start from the mono-methyl ether of pyrocatechin (guaiacol), which on treatment with chloroform and alcoholic potassa, yields vanillin direct.

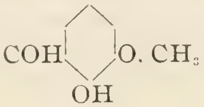


Guaiacol

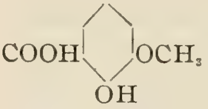


Vanillin.

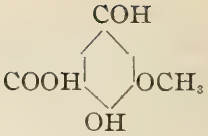
In this process a side product is formed, in which the aldehyde group enters the ortho instead of the para position, this product being methoxysalicylic aldehyde.



This feature has been avoided by von Heyden, in which guaiacol-carboxylic acid (produced in his synthetic salicylic acid process) it treated with chloroform and alcoholic potassa, yielding vanillic acid, from which vanillin is obtained upon the removal of CO_2 group :

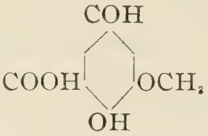


Guaiacol carboxylic acid.



Vanillic acid.

Lately Fajans devised a process in which by the action of CO_2 on guaiacol sodium at 180° C., a guaicol-di-carboxylic acid is formed, thus :



Then on treatment with chloroform and potassa, the carboxyl group (para) is replaced by the aldehyde group, yielding vanillic acid which is converted into vanillin by heating.

Summing up the various processes, they may be classified as follows :

1. Through oxidation of an aliphatic side chain, vanillin may be obtained from
   - *a*) coniferin, glucovanillin, olivil, acetoferulic acid ;
   - *b*) eugenol, isoeugenol, aceteugenol, eugenol acetic acid, aceto-iso-eugenol, benzyl-iso-eugenol, methylen-iso-eugenol, iso-eugenol-toluic acid.
2. The following compounds are capable of being converted into—*p*-nitro-*m*-methoxybenzaldehyde, which is readily converted into vanillin :

   Toluol (as *p*-nitro-*m*-chlorotoluol), cinnamic acid (as *m*-methoxycinnamic ester), benzaldehyde (as *m*-amidobenzaldehyde).
3. Through introduction of a methyl group in protocatechuic aldehyde yielding vanillin :

   The di-metallic salts, the mono-acetyl, the benzyl and the benzol-sulpho compounds of protocatechuic aldehyde.

4. From guaiacol, vanillin is obtained:
    a) through introduction of an aldehyde group by treatment with chloroform and caustic potassa;
    b) through conversion into guaiacol-carboxylic acid, introduction of an aldehyde group and splitting off of the carboxyl group;
    c) through conversion into guaiacol di-carboxylic acid, treatment with chloroform and caustic potassa finally removing the ortho carboxyl group.

GIANT BIRDS OF AMERICA.

THE COCOPAH MOUNTAIN VULTURES ARE LARGER THAN CONDORS.

(*Los Angeles Correspondence of The Philadelphia Times.*)

While the International Boundary Commission has resurveyed the territorial lines between the United States and Mexico and has set up a string of granite monuments all the way from El Paso westward to San Diego, on the Pacific Ocean, since September, 1892, it has been the means of giving to the scientists of the world much valuable information. The country through which the commission worked its way from El Paso westward is probably as wild, desolate and dangerous to human life as any on this continent. Thousands of square miles through which the boundary line between the Union and Mexico runs is as hopelessly a burning desert as the Sahara. There are mountains and canyons there that have never been trod by white men, and any company of a dozen or so white men would be hazarding their lives to attempt to go there for purposes of exploration. The temperature in that region ranges from 110° to 125° for weeks at a time in summer.

When the International Boundary Commission and its accompanying body of United States soldiers and laborers started from El Paso on an expedition of three years the opportunity to send men for scientific purposes along with the party was eagerly improved by the authorities of the Smithsonian Institution at Washington and at the Academy of Sciences at the City of Mexico. There were mineralogists, geologists, entomologists, geographers and general naturalists in the party, and they gathered together literally a carload of specimens in the animal, vegetable and mineral kingdoms.

The most fruitful results of the scientific expedition were those among the birds and animals. Dr. Edgar A. Mearns, United States Army, had charge of the collecting of ornithological and mammal specimens in the progress across the deserts and mountains and through the Cocopah Indian region. The doctor and his assistants collected nearly 20,000 specimens of curious life, and they have been busy for weeks in arranging the enormous collection. The doctor has packed his specimens in San Diego and has gone on to the Smithsonian Institution with them, expecting to put in some two years in classifying them and putting them in shape for the information they will impart to naturalists everywhere.

Among other birds making their last stand in the Cocopah Mountains before the advance of man is one of noble size—a bird that, as a strong, powerful and graceful flyer, is the peer of American birds. It is a California vulture. In size it is larger than the South American condor, that king of birds in the cloud-touching Andes. Few of these birds are left in California, and they are not numerous even in that part of the Cocopah Mountains traversed by Dr. Mearns. It has been remarked that the California vulture is a cowardly bird, but the members of Dr. Mearns' party do not think so after observing one of these vultures fight a rattlesnake. It was in the early morning. The big bird had seized the snake behind the head and was struggling upward with its writhing, deadly burden. The snake's captor appeared aware that its victim was dangerous. The burden was heavy, as the reptile was nearly five feet long. The great pinions of the vulture waved rapidly as it slowly ascended from the mountain mesa. Although large in size, these vultures are not as strong as they appear to be. Up and up and up went the bird and the rattlesnake.

The grip of the bird on the snake's body was not of the best. The snake seemed to be squirming from its captor's talons at least sufficiently to enable it to strike at the great bird. The triangular head of the snake was seen to recoil and dart at the mass of feathers. It did this once or twice, and then with a shriek the vulture dropped its prey, The bird was then probably 500 feet or so above the observers. The astonished men below were then treated to a spectacle seldom seen anywhere. Few birds but a vulture could accomplish such a feat. The instant the snake escaped from the bird's clutches it dropped earthward like a shot. And like a shot the bird dropped after it, catching the astonished snake in midair ere it touched the ground with a grip that caused death. At any rate, the snake ceased to wriggle, and the vulture soared away to a mountain peak to devour its hard-earned meal. Why the snake did not bite the vulture and cause the death of the bird can only be explained by the fact that the thick feathers probably protected the biped's flesh from incision by the reptile's fangs.

These vultures are closely allied to the common turkey buzzard. Their color is a glossy black, with patches of white under the wings. The greater part of the neck is bare, like the turkey buzzard, with a ruffle where the feathers begin. There is a bright orange patch on the head. A fair sized specimen of the California vulture is four feet high and weighs about twenty pounds. Years ago, when these huge birds were common, it was a familiar sight in the valleys to see California vultures and buzzards feeding on the same carcass in perfect harmony, while occasionally a raven would join them. These vultures were frequently caught alive, when gorged, by a lariat in the hands of a cowboy. One cause of the extermination of the vulture in California has been through the medium of poisoned meat, prepared by ranchers to kill pestiferous animals. The breeding habits of the vulture are practically unknown, although it is supposed to nest in caves or cliffs, like the turkey buzzard. Owing to the practical extinction of the bird its eggs are as rare and valuable as are those of the great auk, and will probably become more valuable. Some fifteen perfect eggs of the great auk are in collections, one of these eggs being worth $1,500 or more. Only two eggs of the California vulture are known to exist. Even the National Museum at Washington does not possess one of these valuable specimens.

Observations of bird life at different places along the route of the boundary survey, which often took the naturalists into the mountains, were of rare interest. At one point along the shores of a small lake many dead birds were seen. These birds were known as the "eared grebe." The bodies of the birds found within the limits of a given distance were counted, and the number of dead birds about the shores of the entire lake was estimated at 350,000. It was thought that one of two causes, or both combined, must account for the death of so many birds. Either the water, which was saturated with salt and soda, was in some way injurious to them, or remaining to search for proper food, which did not exist in the lake, they became so weak as to be unable to fly and died of starvation. It is said by old guides that this tremendous bird mortality occurs at this particular point regularly every year.

THE Alumni Journal

Published under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. April, 1896. No. 4.

The Alumni Journal will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, . . . One Dollar
Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
Fred. Hohenthal, 857 Third Avenue.

All communications relating to finances and business matter in general should be addressed to
Thos. M. Davies, 543 Third Avenue.

All communications relating to subscriptions should be addressed to
Nelson S. Kirk, 9 East 59th Street.

EDITOR.
FRED. HOHENTHAL, Ph. G.

ASSISTANT EDITORS.
K. C. MAHEGIN, Ph. G.
J. KUSSY, Ph. G.
RUD. BOENKE, Ph. G.

ASSOCIATE EDITORS,
CHARLES RICE, Ph. D.
CHARLES F. CHANDLER, Ph. D., M. D., L.L.D., etc.
ARTHUR H. ELLIOTT, Ph. D., F. C. S.
HENRY H. RUSBY, M. D.
VIRGIL COBLENTZ, A. M., Ph. G., Ph. D.
SMITH ELY JELLIFFE, M. D.
GEORGE A. FERGUSON, Ph. B.

EDITORIAL.

The Annual Meeting of the Alumni Association on the celebration of Alumni Day will take place on May 6th, the day before the Commencement of the College.

Full details will be published in the next issue.

Before another Journal is issued the boys of '96 will have passed through the severe ordeal of showing what they have learned (or don't know), and many will, after having pocketed their sheepskins and doffed their high hats and swallow tail coats after the Commencement is over, travel to different parts of the the country to commence the battle of life in earnest. We hope that, whether in city or country, they will not let go of their allegiance to their Alma Mater (the noblest and best College of Pharmacy) or to the Journal, which hopes to hear from all with notes for each issue.

The Annual Meeting (and election of officers) of our College was much better and more enthusiastically attended than in previous years, and the brilliant staff of officers elected bodes well for the ensuing year. At the conclusion of the election the retiring President, Samuel W. Fairchild, was presented with a beautiful bronze figure mounted on a solid marble pedestal (five feet high in all) as an appreciation of the wonderful and indefatigable work he had done for our College. The President responded in happy words, stating that when he entered the room he saw that canopy-covered figure, but paid no further attention to it, supposing it one of the apparatuses used by the professors to illustrate their lectures. The professors present smiled.

The next lecture will be by the same accomplished gentlemen, Herman A. Heydt, Ph. B. LL. B., who delighted us with the European lecture, and will be on *Mountain Climbing in Switzerland*, illustrated with stereopticon views, on Wednesday evening, April 8th, at 8 o'clock. It is sincerely hoped a good audience will be present, as Mr. Heydt's lectures are too good to be missed.

Merck's 1896 Index has just been issued and will be found by all who possess it as a very handy and correct reference book.

This year's Commencement of our College will take place at Carnegie Hall on May 7th in the usual felicitous manner as in previous years, as can only be expected when such genial and experienced gentlemen who have managed these delightful and impressive ceremonies before are in charge again.

The very accurate report of Dr. Phillips' excellent lecture was taken in shorthand by Messrs. Chas. W. Morris and W. A. Cornell, of 252 W. 22d street, New York, who can be recommended for their superior qualities in that line for medical and pharmaceutical work.

Alumni Column.

OUR SOCIAL MEETINGS.

CARD PARTY.

'T WAS indeed a humor loving contingent that assembled in the Alumni room to participate in the card party held Wednesday evening, February 26. Tobacco in every form, including pipes, were supplied to the guests gratis. After the inspiration for card playing had ceased, stories were given, not fish stories, but students' stories. Singing was then indulged in, the piano issuing the accompaniment. A recitation followed, and then the star attraction of the evening was rendered in the form of a one act farce comedy which was sidesplitting in every sense of the word, the principal actors being Messrs. Ruckert, '98, and Kirk, '94, whose abilities as comedians are justly styled talented. Merrymaking was continued until Roosevelt's "no man's hour" was reached, when the Alumni room became deserted, the verdict of the departing guests being—an evening well spent, with a wish for a repetition of the same.

Among those present were Editor Hohenthal, '81; Secretary Hoburg, N. S, Kirk, '94; J. C. Becker, '96; T. E. Butterworth, '96; G. H. Carter, '96; Mr. Irvine, '96; A. E. Gartner, '97; G. T. Ruckert, '98, and many others who claim the friendship of the foregoing gentlemen.

SMOKER.

THE smoker held Wednesday evening, March 4, exceeded all our previous smokers in attendance. By 9 o'clock the Alumni room became saturated with guests, all of whom possessed that jovial disposition which is characteristic of typical entertainers. Vice-President A. C. Searles acted as master of ceremonies. The college glee club rendered some choice and up-to-date selections, while others exhibited their skill on the piano. Among those present were Vice-President A. C. Searles, Treasurer Henning, N. S. Kirk, '94; G. H. Carter, '96; E. Uhle, '96; W. McKenna, '96; J. Brooks, '96; B. Hulick, '96; J. Hostmann. '96; A. Massmann, '96; T. E. Butterworth, '96; A. Imhof, '96; C. Patrick, '96; C. L. Stevens, '96; J. Peterson, '96; G. H. McCoy, '96; F. W. Trowbridge, '96; T. G. Wilbur, '97; C. E. Bagley, '97; D. J. O'Brien, '97; J. B. Kelly, '97, and their friends.

LECTURE.

A SMALL but appreciative audience occupied the amphitheatre at our college on Wednesday evening, March 11. Dr. Wendell C. Phillips delivered a very interesting lecture entitled "The Bright and Dark Side of Hospital Life," which was illustrated by stereopticon views. The able lecturer highly commended Bellevue Hospital and laid great stress in emphasizing the philanthropic work done by charitable institutions.

After the lecture a business meeting was held in the Alumni room, President Stover officiating. Those present were President Stover, Editor Hohenthal, Treasurer Henning, Secretary Hoburg, "Boss" Geo. Burger, '94; L. Erb, '94; H. Krueder, '94; T. Davies, '94; R. Gies, '95; E. Meyer, '95; J. Jorgenson, '94; G. Dürr, '95, and last, but not least, ex-President Graeser, '89.

SOCIABLE.

THE Sociable held Wednesday evening, March 18, in the Assembly Rooms of our College, proved a miniature repetition of our ball held in January. The music was rendered by Professors Stirweiss and Schubert. The dancing order was given *a la carte.*

Duirng intermission Miss Zimmerman rendered vocal selections as did Mr. and Mrs. Gies who are noted for their entertaining proclivities. Father Time recorded the even small hours of the morning ere the band played "Home, Sweet Home."

Among those present were President Stover, Editor Hohenthal, Secretary Hoburg, F. Borggrere, '92, J. S. Stage, '93, F. M. Stage, '93, E. F. Lohr, '93, C. Stoerzer, '94, J. Kenny, '94, F. Corves, '94, T. M. Davies, '94, N. S. Kirk, '94, R. Gies, '95, H. Struck, '94, H. Wurthman, '94, G. H. Jorgensen, '95, C. P. Gould, '96, G. E. Manville, '95, B. Gulick, '96, N. Brownell, '96, C. Gregorius, '96, C. F. Smith, '97, F. D. Lursch, '97, G. Ruckert, '98, E. J. Mahlstadt, W. A. Neuman, F. Ruckert, A. C. Coe, A. Massmann, A. Scheotser, W. S. Burger, W. C. Vincent. The ladies roll—Mrs. R. Gies, Mrs. F. Hohenthal, Mrs. Meagher, Mrs. Ph. Fraser and the Misses N. Lowter, C. Ruckert, E. Ruckert, J. A. Stage, M. Meares, S. Meares, M. Gottlieb, E. Klein, H. Hoburg, E. Gladhill, M. Mansfield, A. Mansfield, B. Schall, H. Vogt, M. Vogt, S. Does, M. Murray, M. Borggrere, B. Mainken, M. Koenig, M. L. Vincent, Zimmerman and Ives

NEWSY AND PERSONAL.

RUDOLPH GIES, '95, has been appointed a member of the Entertainment Committee, vice Wm. A. Hoburg, '93, resigned.

HENRY STRUCK, '94, has qualified as a member of our Association. Bravo! Heinrich.

A VALUABLE addition has been made on the editorial staff of our JOURNAL in the person of Joe Kussy, '94, as assistant editor,

CHAS. W. ROBERTS, '92, has recently assumed the management of the Linden Pharmacy, in Hartford, Conn.

ANDREW E. HEGEMAN, '92, has the grand distinction of being the proprietor of a pharmacy which is one of the handsomest in Bath Beach, N. J.

JOSEPH N. DOAK is manager of Rudolph Gies' pharmacy on Third avenue near 28th street, New York.

ECHOES are heard that Graeser, '89; Kreuder, '94, and Wurthman, '94, are living up to expectations as students at the P. and S.

A MAJORITY of the active members of our Association have been elected members of the college.

THAT our sociables are cutting ice is significant in the fact that three matrimonial engagements have been announced since we inaugurated the social calendar. Beware, ye bachelors. This is leap year. Better have a mitten in your pocket.

GEO. F. BURGER, PH. G.,
115-119 W. 68th St., N. Y.

Alumni Notes.

BREVITIES.

ANY of our readers or friends of a photographic turn of mind can hear of something to their advantage and obtain some of such goods very cheaply from one of our friends who is giving up the pastime. Address: Amateur, care Editor's Office.

OUR Secretary would like to have the addresses of the following members named below; any of our readers able to furnish them will favor greatly by communicating with Mr. Hoburg:

Gurdon S. Badger, Class '90;
H. A. Braecklein, '90;
H. W. Walp, '90;
Andrew G. Stafford, '90;
Fred. O. Schroeder, '89;
Fred. G. Hartman, '90;
Louis D. Huntoon, '90;
Emil Buehler, '88;
F. K. Burr, '88;
A. W. Moschowitz, '88;
Chris. H. Magenheimer, '89;
Antonio Pisani, '90;
M. C. Brown, '89;
Chas. C. Stewart, '90;
Edw. Stone, '91;
C. Benkendoerfer, '90;
Alphonse Dubois, '90;
Frederico Peiter, '90;
J. Mochowitz, '90;
Chas. H. Roese, '90;
Gus. Katz, '90;
J. H. Morey, '89.

F. W. SCHAUB, '92, is now with Joseph Weber at Lexington avenue and 56th street.

'93 NOTES.

IT has been the source of great regret to me that I was prevented from attending the lecture by Dr. Phillips on March 11. Those who were present say the subject was a most interesting one, to which the Doctor did full justice. I will not be so remiss the next time, as such opportunities must be taken advantage of.

WE civilians can breathe easier. The country is safe. Eugene C. Webb has joined the 8th regiment, and has been duly installed as a hospital steward. And, by the way, common report says that Webb has raised a beautiful crop of hirsute appendages.

TALKING of beards, how many of you have seen Tanny's lately? His luxurant growth gives him quite a distinguished appearance, and several people have asked me lately whether he is a philosopher or a French Count.

THOSE of you who have not read "Happy Harry Heller's" article in a recent issue of a contemporary, cannot claim a full and liberal pharmaceutical education. It is written in the right spirit, of which we should have more in our ranks.

"PAPA" LAUFFER, and those who does not remember him with his fierce and war-like mustachios, and his Prussian lieutenant-like carriage, writes me from Bloomfield, N. J., that if his two youngsters keep on the way they have started, they will be Ph.G's, N. Y. C. P. 1915 and 1916. Let the good work go on. I can only advise the boys "Go ye and do likewise."

FATE seems to arrange things so that we always have several of the class in the Annexed District. Now there are James Wilson, at 138th street and Willis avenue; L. J. Meighan, 151st street and Courtland avenue; and L. Ambos, 139th street and Willis avenue.

APROPOS of J. Wilson, the young man with curly hair and of good moral character. He is studying German. He was having a most spirited and exciting discussion with a German lady customer on the merits and demerits of Kamillen Thee, and was flattering himself that he was getting along swimmingly, when she floored him with "Oh, dear, I wish there was some one here who could speak German." Thus are our most fondly cherished hopes rudely dashed to pieces in a moment. Better luck next time, Jim.

L. J. MEIGHAN has made use of his pharmacognosy specimens in a very attractive window display. Who will now dare say that the value of our theoretical education ceased when we got our sheepskin that eventful evening?

OH! into what serious complications has not the Wrensch family involved us? I hear from one source of "unquestioned veracity," that our Henry C. Wrensch. Jr., (don't forget the Jr.), has bought a store in Montclair, N. J., and from another column in the JOURNAL, I gleam that it is his illustrious brother of '95. If one of the Wrensches won't come forward and end the suspense by telling us who it is, I am afraid we will have to get a diplomat from Washington to unravel the complication, which threatens to become of national importance.

OUR Wrensch writes me that he has not been wrensched down as far as Catherine street, but is at Pearl and Madison streets. He requests me to insert the following "ad.:"

For Sale or To Let—A copper-lined, double-back action, collapsible and indestructible high hat, suitable for any one who wishes to join the high hat brigade, will sell or rent, as desired. For dates, terms, references, etc., address, H. C. Wrensch, Jr., 426 Pearl street.

THE reception on the 18th inst., was very enjoyable. The number present was almost double that of last time. '93 deserves a lecture, for while all other classes were largely represented, the faithful of '93 were again; Billy Hoburg and sister, Stage brothers and sister, and myself. Those of you that do not come punish yourselves, for the affairs are all most enjoyable. "So buck up," boys, and let us see you, if it is only one evening a month.

EUGENE F. LOHR. PH.G., 375 3d ave.

'94 NOTES.

"IT'S all over, boys;" the proud distinction we have always cherished as being the Banner Class is about to be grasped from us. For '96 under ordinary conditions will graduate at least 175 as compared to our 128. While we regret having to accept second place, we realize that the inducements offered by our Alma Mater are being appreciated. Hope that '96 will reciprocate, by appreciating the value of the Alumni Association.

THE '94 delegation to the Reception on the 18th was a conspicious one, as a glance at Prof. Burger's column will indicate. We should like to see class interest grow in Alumni social affairs, for "to promote sociability" is one of the Association's objects.

AS a diagnostician, Dr. Kreuder is making quite a reputation, the following case speaking for itself. At the Smoker held on March 4th, a smooth faced, gilded pharmacist lit one of the pipes, which were on top; assuming a comfortable position he began to enjoy a sweet solace, listening to the alternate piano and banjo selections, suddenly he arose from his chair, pressed his hands against his head and persisted in saying that he had banjos inside. Dr. Kreuder was hastily summoned. and after a thorough examination, announced that the patient was suffering from Catarrh (Guitar).

WITH the addition of "Joe" Kussy to the editorial staff of THE ALUMNI JOURNAL its value as an up to date journal will be considerably enhanced. A glance at his contributions during our senior year, would reveal many columns, which for originality and cleverness have yet to be surpassed. Though inclined to be of a quiet, unassuming disposition, he is nevertheless an ardent worker for the Alumni, and we thoroughly appreciate his presence at any of our social functions and particularly should we, when we take into consideration the fact, that he has the journey from the "wilds of Jersey" to accomplish it.

HAVE you heard it? One of our Benedicts was down to Macy's buying some hosiery; after making the purchase and to relieve the monotany of the necessary wait in procuring the change, he began chatting with the clerk, when a young lady came up and with a Bostonese accent asked for a pair of "girters," in the following way, "I desire to purchase a pair of girdular apparatusses capable of holding in the proper position the covering of that portion of the nether limbs, which modesty prevents me from mentioning." The clerk fainted and the Benedict hurried home with his—well, what he bought.

Henry G. Born is at present with Oscar Kress & Co., of this city, but intends embarking in business for himself shortly. Brooklyn will probably claim him.

Remember the date of the next and last Reception, Wednesday, April 15th,

Nelson S. Kirk, Ph. G.,
9 E. 59th st.

'95 NOTES.

At the last meeting of the Alumni Association Dr. W. C. Phillips delivered a lecture on hospital life, which was illustrated by stereopticon views. Quite a large number were present, notwithstanding the inclement weather. Of our boys there were present Messrs. Dürr, Flick, Gies, Jorgenson and Aquaro.

LOST.

Messrs. Franck, Geritzen, Gieschen, Gifford, Green, Greenleaf, Greer, Harding, Hilliard, Hastorf, Hawn, Heinig, Hentschel, Hering, Hoefling, Horton, A. A. Kellog, J. H. Kellog, Kerr, Klein, Klipp, Kneuper, Knight, Koerber, Koster, Lourie, Lavalaye and Lurch.

Any information relating to the above named gentlemen will be thankfully received.

FOUND.

Hummel is at Glasco, N. Y.

Cordner has been travelling for Fairchild Bros. & Foster for some time.

Dürr is dispensing (with) drugs at 905 Eighth avenue, in the store of F. B. Bracher. He was elected a member of the Alumni Association at the March meeting.

Broesler is with H. Graeser, Ph. G., corner of Stanton and Forsyth streets.

Dauscha is still artistically twisting pills at Miller Bros. store, 48th street and 10th ave.

Foster joined the benedicts about two or three weeks ago, and we take this opportunity of congratulating him. His wife is said to be a very handsome woman.

Wrensch reports that he is doing a very good business in his Montclair store at 610 Bloomfield ave. His brother is in this city at present; he is associated with him in the business.

For the past seven months Wrensch has been with our former instructor, Wm. H. Madison, Ph.G., and he says that together they composed the "Faculty" of the "Imperial Pharmacy," 238 State street, Bridgeport, Conn. His junior clerk, named Curtis, is a member of the class of '97.

The next alumni lecture is to be delivered on April 8th, the subject to be "Mountain Climbing in Switzerland," by H. A. Heydt, Ph.B., LL.B., who gave such an interesting lecture in February.

Rud. Boenke, Ph.G.,
437 E. 87th St.

Following is the programme for the Alumni Wednesday evening sociables for the month of April:

April 1st. Smoker.
April 8th. Lecture by Herman A. Heydt, Ph. B., LL. B.
April 15th. Reception.
April 22d. Smoker.
April 29th. Open.

Nelson S. Kirk,
Rudolph Gies,
Geo. F. Burger,
Committee.

PENNSYLVANIA MUSINGS.

The Alumni Journal of March came to my hand like a good letter from an old friend.

Yes, through necessity I am sojourning in the mountains of Pennsylvania, in a successful effort to regain my health. The county of Pike which Horace Greeley made popular in that memorable expression, "There is nothing in Pike County but rocks, rattle-snakes and Democrats," is noted for its great natural beauty and health-giving air. Here no poisonous gases from factories or marshy ground contaminate nature's health restorer. Milford is a mecca to which invalids make their pilgrimage from conjested cities. As Whittier has said:

> "There's iron in our northern winds,
> There's healing in our pines."

What does one find to do in winter? It might be a natural question. Mountain climbing, skating, sleighing, and the pleasure of indoor games, while away the hours of recreation. The more fruitful hours, however, are those spent in scientific research, and practical information coupled with a study of literature.

I have just spoken of mountain climbing, and in that connection wish to refer to the Sawkill Falls which are near town. They are truly a beautiful winter scene as they are framed in their setting of snow like masses of pearly ice. The splashing water comes dashing between the rough and rugged rocks, and suddenly plunges thirty feet, catching and gathering its flood of water in a basin some fifty feet wide; it as unexpectedly leaps full eighty feet into its deep, dark basin below, and wends its way in pretty cascades to the placid Delaware. The crystal ice around the falls, hanging in pendants and supported in stately pyramids, causes the sun to scintilate back and forth from neighboring walls of "crystal clear." The emerald green pines make a fitting frame to illumine the living picture as they blend with the complimentary blue of the heavens. The laughing water, as it prances away in miniature cascades in the ravine below, blends with the reverberating war of the cataract like the softer tones of architectural music, or the singing of the birds among the sighing pines.

In a recent stroll I went to the cliffs. "The Cliffs" resemble the palisades of the Hudson, as they are perpendicularly in majestic grandeur several hundred feet above the winding Delaware valley. The road at its base is said by bicyclists to be the best one in Pennsylvania. But I am digressing. What I was going to mention has almost been lost in my mind. It was that while taking this walk to the cliffs, and gathering a winter bouquet of bittersweets, the shiny leaves of the beautiful rhododendron holding in their fingers the inanimate life of exquisite blossoms, and the warm looking fruits of the sumac. I was poisoned by the toxic *rhus glabra*. Fortunately I remembered a remark of Prof. Rusby in this connection, and my hand was soon healed. Is it the experience of others that the fruit poisons as well as the leaves?

D. M. WELLS, '95.

College Notes.

PROF. ARTHUR H. ELLIOTT, has resigned from the chair of chemistry and physics, and will henceforth devote all his time to gas, being chemist for the Consolidated Gas Co. There will at present be no successor to him, as it is intended to divide the work of his department among the other professors.

PROF. RUSBY, sailed for South America, on March 21, to be gone some time in the interest of science.

THE following are the officers of the college for the ensuing year, 1896-1897:

President:
Edward Kemp.
1st Vice-President:
Charles F. Chandler.
2d Vice-President:
John R. Caswell.
3d Vice-President:
Gustavus Ramsperger.
Treasurer:
Herbert D. Robbins.
Secretary:
Alfred H. Mason.
Assistant Secretary:
O. J. Griffin.
Trustees to serve for three years:
Clarence O. Bigelow,
Samuel W. Fairchild,
George Massey,
Ernst Molwitz,
Reuben R. Smith.
Trustee: (term to end in 1897.)
Charles S. Erb.
Trustees to serve two years:
Charles Holzhauer,
William M. Massey,
Albert Plant,
Charles F. Scheirssner,
Horatio N. Fraser.
Trustees to serve one year:
Hermon W. Atwood,
Thomas J. MacMahon,
Charles Sice,
George B. Wray,
Charles S. Erb.

'97 NOTES.

PROFESSOR FERGUSON has our deepest sympathy in his sorrow.

OUR classmate, Mr. William Becker, recently met with a painful and exceedingly unfortunate accident causing the loss of his right eye. We hope Mr. Becker will keep up a stout heart and not give way to discouragement over his loss.

"WHERE there is smoke or the odor thereof there is fire," was borne out the other day during a botany demonstration, when Dr. Rusby detected the faint odors of burning woolen fibre and damp wood. At first, there was apparent cause for alarm. On investigation, however, one of our worthy classmates was discovered contentedly puffing away on an "Egyptian" (?) cigarette in the lower hall. Luckily for this fume producer the doctor did not make the investigation in person.

KEEP up your "style," gentlemen! Our class historian, Miss Fellows, "is a spottin' yer."

SECTION 2 men should not forget the advice given them in regard to their table drawers.

"WILD WOOLY" has been so very quiet lately that we fear he is ill or in love. Which is it Mr. "Wooly?"

THE DRAMATIC CLUB has failed to germinate. "Chemicus or the Druggist's Pill" was evidently too much of a bolus for the boys.

OUR gentle classmates, the ladies, have done so remarkably well throughout this present term that we are, from sheer admiration, compelled to offer our regards and sincerely hope that they will pass through the "April Ordeal" with colors unlowered.

MR. OEHLER'S descriptive and very thorough drills in Chemistry and in Physics have enabled all, who have given him strict and reasoning attention, to gain a firm footing in those two studies. No fear need be felt by these for the examination results.

WHAT has become of Mr. Moffit? We have not had the pleasure of seeing his cheerful countenance for some time. We hope he is not sick.

"SLEEPY HOLLOW" Livingston is *exclusively* in love with the fair Morpheus. During any "quiz" he may be seen, either courting her embraces, or already tightly clapsed therein. There is no doubt but that she is a "peach," Mr. Livingston, but she'll give you the mitten at examination.

ANOTHER gentleman was heard to murmur as he became unconscious. "Let me off at Buffalo." Arrival due April 27. Porter will see gentleman off safely.

"'97" BIDS Dr. Rusby *au revoir* and devoutly prays he will meet with every success in his botanical researches in Venezuela and that he may return in good health and spirits.

R. W. MILNE.

Senior Class Notes.

THE prompt action on the part of those students who have paid the dues toward graduation is very commendable and practically insures the success of our Commencement. Those who have not paid should not feel timid about doing so, as all money assessed will be needed.

THE question of graduation of the post graduates comes up for the first time in the history of the N. Y. C. P. this year. The members of this class are to be congratulated on their uncommon interest that has made them spend an extra year exploring the mysteries of the profession. We welcome them to a place in our graduation exercises.

THE class was given, without any extra charge, a practical illustration of how the contents of the U. S. P. may be assimilated. This method does not require any special effort on the part of the student and seems also to be very forceful and efficient. You are referred to the class crier for full particulars.

"I WANT two ounces of Peroxide of Gin," she said, her big brown eyes surveying the obliging clerk behind the counter. Under all the circumstances, can Kraft be blamed for not being able to immediately fill the order?

WE could not have selected a better photographer than Dana to make our class picture. It will be of the carbonette finish. A number of the members of the class have decided to take a dozen cabinets of the same finish at the discount offered.

VERY few topics have been discussed in class meetings during the past month. The subject of graduation arrangements have taken up most of the debate. Other matters will be attended to as their importance bring them up for discussion.

SECTION 1, like Section 2, is indeed sorry to lose Prof. Rusby, who sailed for South America on March 21st. We should liked to have had him stay to see us through and to be with us at the annual banquet. We are obliged to console ourselves by thinking his thoughts are with us, though he may be at the time fighting innumerable insects and animals which are thick in that portion of Venezuela. In the height of our Commencement festivities we will remember him and pledge a toast to his success, good health and the capture of the rare specimens of vegetable and animal life.

MR. W. LEE KNIGHT, of Haverstraw, N. Y., a member of the '95 class, has made several calls at the college of late.

OUR lecture course in materia medica has been brought to a close, as Prof. Rusby is making preparations for an extensive trip abroad, visiting the Southern States, Mexico and various parts of South America. Our class will receive quiz from H. B. Ferguson.

THE microscopical course under Prof. Jelliffe, has begun and our boys are pleased to meet our Junior Professor again. He wears that same old, and original smile, and our work under his instruction, although difficult, is not looked upon as an unpleasant task.

AFTER wending our way through fathomless difficulties, our class has at last reached the aromatic stage in organic chemistry.

Mr. George B. Wray, of the examination committee of the college, made us a short call a few days since. His name was unknown to a majority of the class, but undoubtedly we will have the pleasure of meeting the gentleman in the near future.

Mr. G. H. P. Carter, our class treasurer, having accepted a position as drug clerk necessitating his immediate attention, has resigned the office which he held, and also discontinued his course of lectures. He was succeeded by Mr. W. H. Vincent by a unanimous vote.

Photographer Dana has for the past two weeks been subjecting his camera to a series of ordeals which, for severity and proof of stability no doubt outclass any ever inflicted upon a specie of the kodak order. This unlamentable cruelty may be explained by the fact that the class of '96 are to have a class picture, and Dana was awarded the contract for producing the same.

Jonathan Morris,
Rep. Sec. 1.

BOARD EXAMINATIONS IN JERSEY, U. S. A.

At the last meeting of the New Jersey Board of Pharmacy, held at Trenton, the number of successful applicants did not exceed eight per cent. of the entire number examined.

It indicates that a higher standard has been adopted than that of former examinations, which, certainly no one, possessing a friendly interest in our profession, and surely no Ph.G. will regret.

The number of applicants receiving diplomas in that State on previous Board meetings, who barely succeeded in obtaining the required percentage, has been unwarranted and inconsistent with the number of those who spend time and money in endeavoring to secure a more thorough and comprehensive knowledge of the theories and practices pertaining to our profession.

The higher standard of the examinations in New Jersey may be the outcome of the law which went into effect January 1, and which made it compulsory for every pharmacist not then registered, (graduates of the N. Y. C. P. included), to pass an examination or run the risk of prosecution.

However, the writer knows that the majority of the successful candidates were Ph.G.'s, and we venture to opine that no graduate of the N. Y. C. P. will find fault with the course adopted by the State Board of New Jersey.

At the Alumni reception held Wednesday evening, March 18, one could not help but be impressed by the universal good fellowship prevalent. The bonds of friendship formed at college may be weakened by protracted absence, but even this cannot sunder them, and when such reunions as that of the 18th occur, and classmates of the past again meet and dwell upon the recollections of their days at college, how thoroughly enjoyable and inspiring is the event.

Let us hope that the Alumni will continue in the course they have outlined, looking towards the promotion of mutual friendliness and sociability among the graduates of the college.

We are informed that the New Jersey College of Pharmacy is about to erect a new building devoted exclusively to the purposes of the college.

The college is to be congratulated on its remarkably quick and steady progress, due, no doubt, to the zeal and energy manifested by those most closely associated with it. Perseverance and zeal are ever the forerunners of success.

Mixed Merchandise. — A likely negro girl, fit for town or country has had the small-pox, she is about fifteen years old; as also to be sold sundry drugs and medicines by John Briggs over against the meat market in New York.—*New York Gazette*, of 1733.

THREE STAMPS FOR A NICKEL.

The sad event chronicled in the following lines occurred several days ago in the small and insignificant-looking structure on F St., between Fourteenth and Fifteenth Sts., which the United States Government uses as a branch post office.

She was an extremely pretty girl, with the brightest eyes, the pinkest cheeks, the reddest lips, the cutest nose and the sunshiniest face that had been seen in that locality in years.

So pretty she was that the susceptible clerk at the stamps window gulped as if he had swallowed something when she came trippingly up to the window and spoke to him.

"Have you postage stamps?" she asked as innocently as if Government post offices usually dealt in haystacks and grindstones.

But the clerk never noticed that. He didn't notice anything but the sparkling vision before him with three unstamped letters in its soft, white hand.

"Yes, miss," he responded, making a herculean effort to suppress his emotion.

"Can I get three for a nickel?"

Now, this clerk loved his little joke, and a man who will joke on a sacred subject is fit for treason, stratagem and spoils.

"Yes, miss," he answered, and quite tenderly, too.

"Oh, how nice," she twittered. "Mamma said they never sold them any less, no matter how many we wanted. But I said I was sure they would, and now won't mamma be surprised when I tell her that I got three for a nickel?"

The coy, arch smile she sent fluttering through the window to the clerk was something to be treasured in the heart of any man to his dying day.

"I am sure she will," he murmured smiling back at her as best he could under the circumstances.

"Well, give me three, please," and she laid a nickel down in the window before him.

He did not dare look at her, but kept his eyes on the drawer where the stamps are confined.

As he picked out two twos and a one and laid them beside that soft, little hand waiting for them on the window still, there came into her beautiful eyes such a look of tender reproach that he went right over to the registry clerk and registered a solemn vow that never, no, never again, would he permit his sense of duty to dull the finer faculties of his feeling.—*Washington Star.*

WHY THE CLERKS ARE WARY.

A drug clerk was recently severely censured for not allowing a wounded boy to be brought into the store of which he was in charge for treatment. It looked inhuman and doubtless the young man was a little extreme in his views.

On the other hand, those who have not been along where the drug clerk now is have no idea to what extent they are bothered with other people's business.

The following little sketch from a daily paper may serve to throw some light on the subject:

"No, ma'am," said the Third avenue drug store clerk, as he looked industriously out of the window; "I can't possibly advise you what to get for your sister's hand. If it is a bad bruise you better see a doctor, or go to a dispensary. Sorry, but I couldn't do it. I can give you any simple salve you wish, but you'd better see the doctor in the next block."

"It was the car startin' an' her with her foot not offn'n the platform when the conductor he rang twict, and she slipped an' come down on her hand, and it's been a-festerin', and my husband he says she ought to take the law to the company. Not a stroke of work can she do with the pain of it. Don't you think the company would do something?''

''I don't know anything about the company,'' said the drug clerk, emphatically.

''Supposin' I brought her over for you to look at it, and see what ought to be done for it—''

Couldn't think of it. You'll have to see a regular physician.'' As the woman went out reluctantly, the clerk turned to a customer with a meaning wink. ''No,'' he said, ''I am too old a bird to be caught with such chaff. I know just what she was after. I don't mind telling you that I've been caught in my time.

''She is after some of the company's money. The sister may have been hurt through a conductor's carelessness, but that is no reason why I should mix myself up with her case and get subpoenaed and go to court and lose days from my business waiting to tell the judge that I don't know one fact about the case. That's what a drug man gets when he goes playing the good Samaritan with cable-car victims. I've got as big a heart as the next man, but I have my living to earn, and my family to support, and I can't afford the luxury of being a witness in any more cable-car cases. See?''

DYSPEPTIC ORANGES.

A mysterious disease which has attacked many orange trees in Florida has been discovered to be indigestion. The Department of Agriculture in its ''Year Book'' pays special attention to dyspeptic oranges, and describes the disease and its cure. Its cause is the same as that which so often brings on dyspepsia in human beings—overfeeding. Excessive cultivation and too much much nitrogenous manure affect the orange tree just as too much heavy table d'hôte dinners affect a man. Instead of looking pale and taking pepsin tablets, however, the orange tree turns a very dark green, and a reddish brown sap exudes from the twigs. The tips turn up and shape themselves into S-like curves. The fruit turns a lemon yellow color before it is half ripe, and has a very thick rind. As it ripens, the fruit splits open and becomes worthless. The reddish brown resin gets on the fruit before it is ripe and renders it unsalable.

Most of the diseases of the orange tree are due to a lack of cultivation, and it was thought that a tree would not take more nutriment from the soil than it required. This is not so, for the tree takes up all it can get, and then, like a small boy who has eaten too much plum pudding, becomes sick.

The dark green color which the foilage then assumes is very handsome, but it means no oranges, or at least, none that are any good. The disease is known as die-back, because the twigs begin to die at the tips and then gradually die back to the branches. To cure the disease all that is required is to withhold the fertilizer, but when the disease has gone too far and gum pockets begin to form on the bark there is no cure for it.—Kansas City *Journal.*

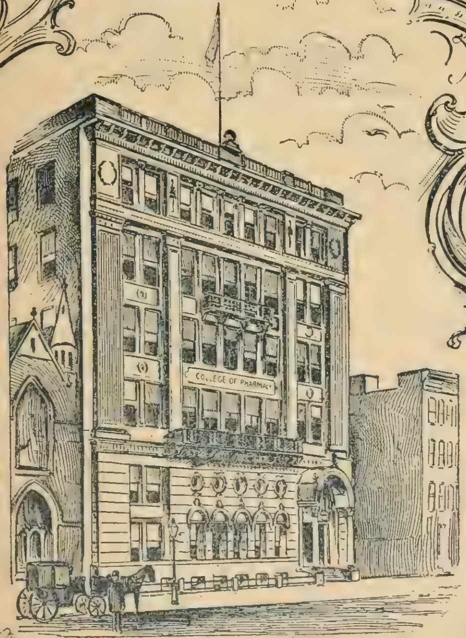
Experiments reported by Breslance *Lancet* show that staphylococcus pyogenes aureus can survive immersion in carbolized oil 5 per cent. for three days, in carbolized petrolatum one day only, fat four hours, in lanolin thirty minutes, and in cold cream twenty minutes. Zinc ointment exerted no germicidal action whatever, and it would appear that the only trustworthy ointment bases for antiseptic purposes are such as contain or will absorb water, as does wool fat or cold cream. In addition, the oil or fat employed should be free from any tendency to become rancid.

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. No. 5.

May, 1896.



Contents:

ASEPTIC CATGUT, ... 101
By Charles Rice, Ph. D.

DETERMINATION OF CAFFEINE IN TEA, ... 103
By E. H. Gane, Ph. C.

OPIUM ASSAY, ... 105
By D. B. Dott, F.R.S.E., F.I.C.

VIVISECTION, . . . 113
By H. A. Haubold, M.D.

FORMIC ALDEHYDE IN THE PRESERVATION OF MILK AND ITS DETECTION THEREIN, . 115
By R. T. Thompson.

THE CATHODE RAYS, . 115

INFLUENCE OF THE CHEMICAL NATURE OF SUBSTANCES AND THEIR PERMEABILITY BY THE ROENTGEN RAYS. . . . 116
By Maurice Meslans.

THE HISTORY OF PHARMACY. 117
By Dr. Niniam Falkiner.

EDITORIAL, ... 119

ALUMNI COLUMNS, . . . 121

COLLEGE NOTES, '93. . . 123
" " '94. . . 124
" " '95, '97. . . 125
" " '96, . . 126-127

MISCELLANEOUS ITEMS. . . . 128

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . .

"Auld Lang Syne."

The person who was unfortunate enough to become seriously ill was obliged to uncomplainingly ingest the vilest of decoctions and infusions, a silent but expressive shudder being the only protest possible. Since those days the patient has learned to demand more palatable methods of medication. ELIXIR LACTOPEPTINE now renders it easy for the physician to meet this reasonable demand, as it effectually disguises the unpleasant taste of unpalatable and nauseous remedies. The contained Lactopeptine also assists in the retention and absorption of other medicaments because of its well known digestive potency. The Bromides, Iodides, and Salicyclates should always be prescribed with ELIXIR LACTOPEPTINE as a vehicle.

Send for Samples.

The New York Pharmacal Assoc. Yonkers, N.Y.

OLDEST STAND ON BROADWAY.

THE "ANIMAL EXTRACT CO.'S"

CARDINE, heart extract, for Heart troubles

CEREBRINE, brain extract for Epilepsy, Brain, Nerves, Hysteria, etc.

MEDULLINE, extract of Spinal Cord, for Locomotor-Ataxia, etc.

MUSCULINE, for Muscular Rheumatism,

OVARINE, for Diseases of Women, Steri ity, Nervous Prostration, etc.

TESTINE, for Nervous Debility, Impair ment, Impotency Exhaustion, etc.

THYROIDINE, for Obesity, Goitre, Ski Diseases, Myxoedema, etc.

☞ *Positively guaranteed as the only brand always strictly according to Dr. Hammond's published formulas. $100 forfeit if not.*

Dr. DECLAT'S PHENIC PREPARATIONS, for Cancer, Consumption and all Fevers

Medals awarded, Paris, Lyons, &c. for Phenic Acid and Compounds.

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER
183 Broadway, - - - - - - - NEW YORK
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, May, 1896. No. 5.

LIBRAR
NEW YO
BOTANIC
GARDEN

ASEPTIC CATGUT.

By Charles Rice, Ph. D.

There is much diversity of opinion among surgeons regarding the most efficient way of rendering catgut ligatures absolutely sterile. Some still prefer the old-fashioned carbolized gut, prepared by macerating or digesting the raw gut with a 5 to 10 per cent. solution of carbolic acid, or chromicized gut, made by macerating the raw gut during forty-eight hours in a solution of 50 Gm. of carbolic acid and 0.25 Gm. of chromic acid in 1 litre of water, then removing and drying the gut, and transfering it to carbolized oil (1 in 5.) Others, and probably the majority of surgeons prefer catgut which has been sterilized by certain liquids with the aid of heat. The liquid most generally used for this purpose is alcohol. In using alcohol for sterilizing catgut, it has been found that the more water the alcohol contains, the lower must be the temperature of digestion; otherwise the gut will soften or become rotten. If absolute alcohol be used, the gut may be enclosed with it in hermetically sealed vessels, preferably glass tubes closed in the flame, and subjected to a heat, under pressure, up to 230° F. and more, without the least injury to its strength. If it were subjected to such treatment while in contact with hydrous alcohol, it would become weak and altogether worthless. Yet, the ordinary 94% alcohol may be used if the temperature is not carried beyond the boiling point of the liquid at the ordinary atmospheric pressure, that is, if the alcohol is boiled in an open vessel. And in this case it has been found that the boiling should not be continued materially beyond one hour. At one time, sublimated gut was recommened and in use. This was prepared by adding a certain proportion, usually 1 in 1000, of corrosive sublimate to the liquid (alcohol) in which the gut was boiled, but it was soon found that this rendered the gut more or less rotten, and therefore highly dangerous, as it was apt to break at any time, thus causing serious or fatal hemorrhage. It is not the writer's purpose to give an account of the various other methods heretofore proposed for preparing sterilized catgut. His present object is to describe those which have stood the test of time, and are now in use in the principal public hospitals of New York City.

Before speaking of the methods of sterilizing, something should be said of the raw catgut. Experience has shown that only the very best, smooth (not rough) musical strings should be used. Under ordinary circumstances, *five* sizes are sufficient. These are violin D, A and E, and first and second banjo strings. These come in boxes containing thirty strings, each string measuring about 67 inches in length, being separately tied with fine twine. When the latter is cut, which need not be done until after the catgut has been sterilized, care must be taken not to scratch or nick the gut, as it would become weak at that spot. Although these musical strings undergo, in the course of their manufacture from the intestines of various animals (preferably lambs and kids) a series of purifying processes, such as the removal of the adhereing mucous membranes, repeated maceration in weak alkali solution and frequent washing, yet they always retain more or less septic matter, which, if not removed or rendered inert, would be sure to cause trouble to the surgeon and his patient. Every string, moreover, before it is finally rolled up and tied is rubbed with a cloth impregnated with some fatty oil, which penetrates the substance of the gut, and renders the latter more or less impervious to the ordinary solvents. A gut therefore, which is afterwards treated merely with an aqueous solution of carbolic acid, or with cold alcohol, with or without some antiseptic salt, is by no means to be trusted. It is essential that all fatty matter be extracted from the gut, or at least, that the latter be thoroughly penetrated by an actual solvent of the fatty matter, which solvent will, at the same time, render permanently sterile any septic matter or germs that may be contained in the gut.

The methods which are now almost exclusively employed in the public hospitals for sterilizing catgut are the following:

1. Maceration in oil of juniper and subsequent boiling with alcohol of 94%; then transferring to and keeping in chloroform saturated with biniodide of mercury.

2. Treatment as under No. 1, but with ommission of the maceration in oil of juniper.

3. Simple maceration for at least forty-eight hours in chloroform saturated with biniodide of mercury. The strings are left in this solution and taken out as wanted.

Some five years ago, when the writer's attention was specially called to the necessity of devising some method by which catgut and other surgical ligatures could be rendered really sterile and trustworthy, he made a number of experiments, the object of which was to ascertain in the first place what processes and solvents had the least weakening effect upon the tenacity of the gut, and secondly which of them would effectually sterilize the gut. It was thus found that chloroform, itself a most powerful antiseptic and germicide, was the most satisfactory solvent of the fatty matters in the gut. And it was further found that complete sterility was effected by saturating the chloroform with biniodide of mercury.

Numerous samples of the catgut thus prepared were examined bacteriologically, but in no case was the presence of any living germs revealed. At one time, some years ago, suppuration was observed to set in after the use of a catgut all derived from one particular lot just imported, and it was at first supposed that this had been imperfectly sterilized.

Yet on examining samples of it under circumstances which would surely have revealed the presence of septic matter, the results were negative. Nevertheless it is now deemed advisable to use the additional precaution to subject the catgut to a preliminary sterilization, by boiling it with enough alcohol of 94% to keep it covered. This is done in a large wide-mouthed Erlenmeyer flask, to the neck of which is fitted an upright Allihn's glass condenser (the condensing tube of which has a number of bulb-like expansions), whereby loss of alcohol is avoided. The flask is set upon a steam-bath, and the boiling kept up for one hour. The strings are then taken out and immediately transferred to the biniodized chloroform in which they are left until wanted. When they are taken out for use, they are placed for a minute or so between folds of sterilized gauze, to allow the chloroform to evaporate. They will now be found to be beautifully clean and more or less bleached, and to have lost none of their strength. Some surgeons prefer the method mentioned above, under No. 1, which involves a previous maceration in oil of juniper. In fact, the raw gut is put into this oil and kept therein until it is to be treated with boiling alcohol. The oil of juniper acts as a solvent of the fatty matters, and therefore may be regarded as an auxiliary to the chloroform. But it is not necessary, and may be omitted.

The biniodized chloroform or "Chloroform with Biniodide," as it is usually called, is prepared by adding 35 grains of biniodide of mercury (free from lumps) to 5 pounds of pure chloroform contained in a flask provided with an upright condenser, and boiling until the biniodide is dissolved, which requires about half an hour. The solution is then transferred to bottles which must be well stoppered. This solution is of the strength of 1 in 1000, and at the ordinary indoor temperature is permanent. When exposed to a temperature of about 60° F. or less, some of the biniodide will separate in beautiful red crystals, but the amount is never large, unless the liquid is exposed to great cold. This biniodized solution is at the same time a very delicate reagent for the presence of chlorine compounds existing as contaminations in the chloroform. Any one of these compounds which contain chlorine in looser combination will set free enough iodine to impart to the solution a pinkish or pink tint. The depth of this color which is characteristic for a solution of iodine in chloroform, is in direct proportion to the amount of contaminating chlorine compounds present. Sometimes the tint is developed at an early stage, during the boiling of the chloroform with the biniodide. Again, it may make its appearance gradually. It is not believed that the presence of these contaminating bodies have any deleterious influence upon catgut which might be treated with the solution, but the writer has preferred, whenever the pink color revealed itself, to make another use of the solution, namely to recover the chloroform by distillation and to set it aside for use in chloroform liniment or for other external or coarser purposes.

New York, April 12, 1896.

THE DETERMINATION OF CAFFEINE IN TEA.

BY E. H. GANE, Ph. C.

The exact determination of caffeine in tea leaves is attended with great difficulty. Numerous processes have been devised, but as will be seen later, most of these have been based on inadequate information, and are valueless for the purposes intended. The process hitherto almost universally adopted, is that devised by Paul and Cownley, which consists in treating the powdered leaves with MgO, and exhausting the dried mixture with alcohol. Two years ago, Allen, in an exhaustive paper on caffeine (Pharmaceutical Journal LII., p. 213), hinted that this process was open to suspicion, the complete exhaustion with alcohol being in some cases impossible. Having occasion recently to determine the caffeine content of a large number of samples of tea, I have made a thorough study of the above and other processes, and the results are embodied in the present paper.

At the outset I would say that a large portion of my work has been merely confirmatory of the work published in Allen's paper previously referred to, a paper which I venture to say has not in this connection received the attention it merited. This work may be briefly summarised as follows :—

1. Aqueous solutions of caffeine can be concentrated by boiling, and subsequently evaporated to dryness in a water oven without any loss of alkaloid.

2. Boiling caffeine with lime causes decomposition, the loss varying under different conditions from 20 to 50 per cent. Boiling with magnesia causes practically no change.

3. Admixtures of powdered tea leaves with lime or magnesia cannot be completely exhausted by percolating with solvent, such as chloroform, ether, etc. This fact was first pointed out by Paul,

4. Determinations of caffeine, based on treatment of the leaves with lime and subsequent boiling with water are valueless owing to decomposition of the alkaloid.

As the above facts have been previously pointed out, a detailed account of confirmatory experiments is not necessary. Finally, as the result of my own observations, based on the examination of a very large number of samples of tea, I have come to the conclusion that the process of determining caffeine in tea by treating with magnesia and exhausting with alcohol, is open to considerable error and should be abandoned.

The difficulty met with in extracting caffeine from the leaves is probably due to its association in the leaf with other bodies, possibly, as suggested by Allen, in the form of a glucoside similar to that occuring in kola nuts ; or possibly owing to combination with some tannoid body. Experiments with a view of elucidating this point have met hitherto with but little success.

Zoller (Zeitschr. Anal. Chem. XII., p. 106) supposes that the cellular structure of the tea leaf causes the obstinate retention of part of the caffeine, and has suggested a process based on the destruction of the cellulose with sulphuric acid and subsequent exhaustion with alcohol after neutralisation with lead oxide. This process gives accurate results, but owing to the retention of the caffeine by the charred tissue, prolonged treatment with large quantities of the solvent is necessary. This process is too tedious for every-day work.

Herlant's process, based on the solubility of caffeine in sodium benzoate is open to objection that complete extraction cannot be obtained under two weeks' time.

Squibb's process, consisting in boiling the tea leaves for a few minutes with magnesia, is one of the most satisfactory yet devised, the only objection being that the boiling is not continued long enough. Several hours boiling is necessary to ensure complete extraction.

The method finally adopted as the most satisfactory, and as yielding the best and most concordant results, was that suggested by Allen. The process is as follows : Six grms. of finely powdered tea are boiled with 500 c. c. of water, using a reflux condenser, for six hours. The decoction is filtered, and the filtrate made up to 600 c. c. Heat to boiling, and add 4 grms. of acetate of lead. Attach to a reflux condenser and boil for 10 minutes. Filter, take 500 c. c. and evaporate to about 50 c. c. Remove the excess of lead by means of sodium phosphate, and finally concentrate to about 40 c. c. The caffeine is then removed by shaking 4 or 5 times with chloroform. Four extractions are absolutely necessary to ensure complete extraction, and it is advisable to use a fifth.

This process I have found to give excellent results. Paul's objection to it that it does not extract all the caffeine seems to be unfounded, for after examination of over 50 samples of tea, I have not in any case found the process yield a less amount than the alcohol process, whilst in some cases it yielded considerably more. From the numerous determinations made, using both Paul's and Allen's methods, I have selected 12 samples as showing the variation in the two processes. The remaining samples yielded practically the same result by both methods, Appended the results are tabulated ;

Sample.	Yield of Caffeine.	
	Paul's Process.	Allen's Process.
	Per Cent.	Per Cent.
1. Black tea dust	2.51	2.56
2. Black whole tea, Japan	2.86	2.89
3. Black Amoy, whole leaf	3.06	3.14
4. Green dust	1.67	2.56
5. Black Congou, whole leaf	3.18	3.36
6. Green Hyson, whole leaf	1.41	2.10
7. Green sweepings	1.52	1.70
8. Black Assam	3.05	3.36
9. Green dust	1.24	2.22
10. Assam, whole leaf	3.93	4.01
11. Ceylon, whole leaf	3.98	4.12
12. Black dust, Japan	1.98	1.96

In the case of samples 4, 6, 9, it will be seen that the yield by Paul's process is very low, compared with that yielded by boiling with water. Complete extraction could not in these cases be obtained with alcohol, although 5 grms. of the tea and magnesia mixture were in these cases treated with 3000 c. c. of alcohol. Even in ordinary cases, where complete extraction by this method is obtainable, from 1½ to 2 litres of alcohol has to be employed to secure extraction of 5 grms of tea. This in itself makes the process objectionable from its expense. The residual caffeine could readily be extracted from the mixture by boiling with water.

The caffeine isolated by Allen's process can be obtained in a state of perfect purity very readily, but when using the alcohol process it is a matter of considerable difficulty to remove the whole of the green coloring matter. In all cases the residue obtained from the chloroformic solution was purified as carefully as possible. In the case of those obtained by Allen's process the residues were snow white and showed the melting point of caffeine. In carrying out this latter process I have found it advisable in some instances to continue boiling it with water for eight hours, though as a rule, six is amply sufficient. Owing to the slowness with which the decoction filters, I prefer to boil the tea with the whole of 600 c. c. of water, and to add the acetate to the solution before filtration. This saves considerable time.

In conclusion I would say that the results above given show Paul's statement that water will not completely extract tea leaves to be erroneous. Allen's process is cheaper to work, less tedious, and gives more accurate results than Paul and Cownley's method.—*Jour. Soc. Chem. Ind., New York Section.*

OPIUM ASSAY.

By D. B. DOTT, F.R.S.E., F.I.C.

Opium being one of the most valuable of drugs, and the source of one of the most important of the alkaloids, its accurate valuation has attracted much attention, involving extensive experimental work. The alkaloids of opium vary in proportion, but the following percentages given by Pictet ("Alkaloides vêgetaux," p. 173) may be regarded as not far wide of the mark.

Morphine	10
Narcotine	6
Papaverine	1
Codeine	0.5
Thebaine	0.3
Narceine	0.2

The morphine is usually in larger proportion. The alkaloids exist in combination with sulphuric and meconic acids. Although codeine is the only one of the minor alkaloids which is presently in constant demand, further uses may yet be found for some of the others or their derivatives. For instance, while narcotine is of feeble activity, hydrocotarnine, which can easily be prepared from it, has a decided physiological action. But whatever may be the case in the future, opium is at present invariably assayed by determining the amount of morphine which it contains. The processes employed for the purpose have undergone a gradual evolution, so that the methods now in vogue compare very favorably with those of the earlier years of the century. Some of these earlier determinations are quite misleading as the crude precipitate weighed as morphine does not afford any accurate indication of the amount of that alkaloid actually present. Even now there is by no means unanimity of opinion or uniformity of practice in regard to this matter, although we are rapidly coming to a clear understanding of the subject. Generally speaking, the difficulty attending an accurate assay of opium may be stated: that on account of the chemical conditions in which the morphine exists in the drug it is impracticable to precipitate the morphine in the pure state without an undue and uncertain loss of alkaloid. Various plans have been proposed and tried to overcome this difficulty. Firstly, and most obviously, the treating of the crude morphia precipitate with benzene and the like to remove impurities. By this means narcotine and its allies, codeine and resinoid are removed, but the residue is far from being pure morphine. Moreover, it is found that the precipitate obtained by rendering alkaline a mere aqueous extract of opium does not contain the whole of the morphine, or otherwise, that the separation is so gradual and irregular as not to be complete in a reasonable length of time. Then came the device of adding a relatively large amount of alcohol or mixture of alcohol and ether to the aqueous solution before precipitating with ammonia. By this means the morphine separates much more readily, in a more crystalline and purer form. than from the watery solution. Petit's process and Flückiger's earlier process partake of this nature. In practice, such methods are quite unsatisfactory. The loss of morphine is considerable, and varies so greatly with the quality of opium, temperature and circumstances that a true correction of loss is impossible. The introduction of lime in assaying opium is generally attributed to Mohr, and appeared to be a decided improvement. A modification of this process was official in the 1867 British Pharmacopœia. The first improvement on the process was to abolish the boiling with the lime, which was an unwise and decomposing performance; and now as improved by various chemists, it is a method widely used and is official in the present British Pharmacopœia. Briefly stated, it consists in triturating a weighed portion of opium with excess of lime and water, filtering, taking what is supposed to represent half the opium, adding to it alcohol, ether, and excess of ammonium chloride, collecting the precipitated morphine, which is dried and weighed. The assay processes for opium being elaborate and troublesome, it was very natural that attempts should be made to devise a volumetric method. Morphine is readily oxidized by iodic acid, ferric salts, permanganate, and bichromate. Mylius suggested the use of iodic acid, relying on the amount of iodine liberated as equivalent to a fixed proportion of morphine. I have tried the addition of excess of bichromate of potash in acid solution and titration with standard ferrous sulphate. But there is uncertainty in all these methods. In the first place, we do not know how much of the oxidation may be due to impurities; and secondly, there is no evidence that a further or secondary oxidation does not occur. Iodine is so apt to react with alkaloids that its liberation from iodic acid by morphine does not appear as a promising plan for the estimation of opium. Even when working with pure morphine, I have not obtained very constant or satisfactory results, but I have only tried a few experiments. The subject has not been by any means thoroughly worked up; it is sufficient to say that these indirect methods are not at present of any practical importance. What the analyst now wants, is to get hold of the actual morphine in as pure a state as practicable and weigh it. The method of Teschemacher and Smith ("Chem. News, lviii) is one of the best for that purpose, and is much relied on. The official U. S. process is substantially the same, and in its present form is mainly due to Dr. Squibb. It consists in exhausting the opium with water, concentrating, adding alcohol, ether, and excess of ammonia; collecting the precipitated morphine, washing with alcohol and with water (both being saturated with morphine), drying, washing with benzene, drying, and weighing. A correction for impurities may be applied by treating with lime-water, which dissolves the morphine and leaves most of the impurities behind.

Considering the useful work that has been done in this subject by American chemists, it was very appropriate that among the first papers contributed to the New York section of this Society were two able communications on the assay of opium. These were given by J. H. Wainwright (this Journal, 1895, 254), and L. Kebler, (this Journal, 1895, 464), and were followed by instructive discussion. I propose to offer a few further comments. In the first place, I would note that the morphinate of lime and ammonium chloride process, formerly official in the United States and now official in the British Pharmacopœia, was condemned by nearly all the speakers, mildly by Dr. Wainwright and emphatically by Dr. Coblentz. The latter stated that the students at college obtained such discordant results by the process that it had to be abandoned, while now by the Squibb method very satisfactory numbers are obtained. Speaking from a more limited experience, I entirely concur in the condemnation. In the first place the idea of taking half the solution as containing half the morphine of the opium is a delusion and a snare. It is a striking example of the danger of going by theory instead of by experiment. If a given weight of water be added to the drug, the variable amount of soluble matters increasing the volume of the solution will cause appreciable error. Similarly, if the mixture be made up to a given volume, the varying bulk of the insoluble portion will cause some error. But there is some further source of error, and it seems to me to be this. It is well known that it is always difficult to extract the last portions of alkaloid from plant tissues. The process is very little anolagous to the washing, say of a sulphate of barium precipitate, where the chloride becomes quickly so attenuated as to give no perceptible reaction. A vegetable powder after long continued percolation, still persistently gives up small portions of alkaloid, so that, as a rule, it is not practicable to completely exhaust. This reluctance to part with the latter portions of alkaloid may in some cases be partly chemical from a small amount of the alkaloid existing as a merely insoluble salt. It is probably, however, far more generally a physical question due to the manner in which the alkaloid or its salt is fixed in the plant cells, very much in the same way as it is difficult or impossible to thoroughly wash an alkaloidal salt out of animal charcoal. Seeing that the powdered drug does not readily yield its alkaloid even to repeated fresh portions of solvent, it will do so much less readily and very tardily when merely kept in contact with a comparatively strong solution of the alkaloid, so that in any practicable length of time the drug will not have passed nearly all its alkaloid into solution. The next scource of error is the large proportion of solution from which the morphine is precipitated. Morphinate of lime is readily soluble in water, but it is necessary to use a relatively large bulk of water, so that the errors from mass of material, as above referred to, may not be inordinately increased. Thence it results that slight differences in the solvent power of the liquid due to variations in temperature, manipulation and other circumstances, must distinctly affect the yield of morphine, which is in small proportion to the mother liquid. In the next place, the larger the amount of morphinate of lime the greater will be the amount of ammonia liberated by the ammonium chloride, and thus the amount of morphine held in solution will be increased. It is assumed that morphine is insoluble in ether, but I know that when freshly precipitated and presumably partly amorphous, the alkaloid is by no means insoluble in ether. This is just a possible source of error. Another point as to which there is some doubt, is the proper proportion of ammonium chloride. The amount always prescribed is much in excess of theory, and there is good reason to believe that this excess interferes with the precipitation of the morphine. After all, the morphine obtained in this process, though usually very pure, cannot always be assumed to be the pure alkaloid. Wherefore some process of purification or estimation must be applied, and that brings the method into the same category as others in which the precipitate is rather less pure, but can be readily estimated.

In comparing the related processes of Teschemacher and Smith, of Squibb, and of Flückiger, we have no hesitation in rejecting the last mentioned. Its weak points are the taking of an aliquot portion of the filtrate, too much dilution, and too much alcohol. Dr. Squibb's method has the advantage over that of Teschemacher and Smith, that it prescribes more definite directions, which tend to constancy of results, and are to be commended in an official process. On the other hand, the Teschemacher and Smith's method has the advantage of greater concentration during the precipitation, which minimises the loss of alkaloid in that operation, and the decided merit of titration of the precipitate with standard acid. There has been some discussion in England as to the inception of the idea of estimating the alkaloid by standard acid, as if it were a recent invention. It was in constant use by the late D. R. Brown, of Edinburgh, 25 years ago, as I had frequent opportunity of observing. All the speakers at the American meetings referred in terms of commendation of the Squibb process, and deservedly so. Dr. Wainwright found the results by the 1890 U. S. P. process to be always higher and more constant than by the 1880 U. S. P. process; the greatest difference of percentage 9.2:7.3, and the least 9·4 : 9·0. Admirable as the method is, and altogether superior to that presently official in the British Pharmacopœia, it is still not above criticism. It is rather elaborate, requiring too great an expenditure of time for ordinary practical purposes. I think also it gives results rather under the truth, particularly if corrected by the lime-water treatment. To precipitate about 1 grm. of morphine from over 30 c.c. of solution containing nearly one-third volume of alcohol and excess of ammonia, is not possible without appreciable loss. Of course there must always be some loss in precipitating an alkaloid like morphine, but the point is that the loss ought to be as small and as constant as possible. This is to be sought for in keeping the solution concentrated and avoiding a large proportion of spirit. The assumption that alcohol saturated with morphine cannot dissolve a further quantity of morphine is not to be implicitiy trusted when the spirit has become charged with other matters, and the morphine precipitate may not be entirely in the crystalline state. There is a slight element of risk in this washing with morphiated spirit, more especially should the precipitate be exceptionally impure. Dr. Squibb found the impurity to vary considerably, as indicated by the lime-water test, and Dr. Wainwright found that in a sample of Persian opium the 16 per cent. of morphine indicated was reduced to 11 per cent. when corrected by treatment with lime-water, so that the precipitate which is being treated is not a constant factor. In the American discussion Dr. Squibb received general support in his contention that the morphine should be dried at 60° C., so as to avoid loss of water of hydration. The British Pharmacopœia is certainly wrong in its instruction to dry at 96°—100°, meaning obviously in a water-bath. It has never been the custom to reckon morphine in the anhydrous state. Moreover, morphine loses its water very slowly at the temperature of a water-bath. If anhydrous morphine is desired, then dry at 110° in an air-bath. Of course, if the morphine is to be titrated with standard acid, it does matter whether it is over-dried or not.

Kebler's paper entered very fully into the amount and nature of the mineral matter found in the morphine precipitate, and on the determination of the ash as a means of correcting for impurities. Several years ago Dr. C. H. Warden analyzed the ash of Indian opium, and found ("Chem. News," xxxviii. 146) the the following percentages:—1.98 Fe_2O_3, 7.13 CaO, 2.31 MgO, 37.24 K_2O, 1.70 Na_2O, 23.14 SO_3, 10.90 P_2O_5, 15.27 SiO_2. In 1881 I contributed a paper (Proc. R.S.E., Jan. 1881) on the salts of meconic acid, and showed how readily that acid forms a basic calcium salt. I have since proved that this basic salt neutralises acids, as one would expect, and that its formation should, if possible be avoided, as leading to a slight error in titrating the precipitated morphine with acid. Kebler found in the morphine (U.S.P. 1890 process) 0.9 to 1.4 per cent. of ash; of the composition:—

Soluble in water (K_2CO_3, K_2SO_4. $NaCl$)	27.88
Silica	0.83
Aluminium phosphate	0.43
Magnesium phosphate	13.45
Calcium carbonate	56.17

It is evident, therefore, that even if the calcium existed wholly as basic meconate, the error in titrating would not be very serious. But there is a more interesting fact brought out in Kebler's results, which might almost have been anticipated from Warden's analysis. I refer o the considerable amount of potassium salt found in the ash. Kebler does not indicate but I think there can be little doubt that the potassium would exist in the precipitate as the sparingly soluble potassium–magnesium–phosphate, which would be decomposed when ignited with the organic salts. There would therefore be a small error due to neutral-phosphate in titrating with standard acid. It is difficult to suggest a means of getting rid of this trifling error, which is not open to objection. The slight error due to basic-calcium-meconate may be eliminated by adding a small quantity of ammonium oxalate before precipitating. By this means the calcium is thrown down as neutral-oxalate, which does not interfere with the titration. Kebler inclines to the belief, that determination of the ash, after calculating the carbonate into meconate, is the best means of correcting for impurity in the morphine precipitate, but he admits that titration with acid is nearly as accurate and much more expeditious. It is evident that in the case of a precipitate containing a good deal of organic impurity, estimation by standard acid would be the better way; while if the precipitate contained basic mineral matter it might be more accurate to correct by an ash determination. The idea of washing the precipitated morphine with lime-water is a good one, though somewhat tedious. By this means the alkaloid is entirely dissolved, and most impurities left behind. I have used baryta-water for the same purpose. Being stronger it has a more powerful solvent action on the morphine, but possibly it also dissolves more coloring matter. Treatment with lime-water or baryta-water may sometimes be useful as a check, but practically I think titration with decinormal acid is the best means for estimating the morphine precipitate.

In the "Pharmaceutical Journal" I have described two methods of opium assay, (XXII. 740 and XXIV. 874) which I have since slightly modified. As they appear to have some advantages, they may be here briefly described.

A. 10 grms. of opium are exhausted with spirit of "proof strength" (.920 sp. g.). Evaporate to one fourth volume. Dilute this with half its volume of water containing .05 grm. of ammonium oxalate, then cautiously neutralize with ammonia so as to leave just perceptibly acid. Allow to stand for an hour, filter, and concentrate to 8 c. c., then transfer to a flask or bottle holding 100 c. c. by means of 2 c. c. water and 3 c. c. alcohol, afterwards adding 2.5 c. c. solution of ammonia (.960 sp. g.) and 25 c. c. ether. The flask is corked and shaken occasionly during the next hour. After 18 hours the ether is decanted as completely as possible, the precipitate collected on counterpoised filters, washed with morphiated water and dried. It is then washed with chloroform and dried about 60° C. Finally it may be titrated with standard acid. The success of this method depends chiefly on the careful neutralization of the solution, avoiding any considerable amount of free acid on the one hand, and avoiding also, on the other, any precipitation of morphine. If these conditions are observed, a very pure precipitate is obtained, the treatment with standard acid being almost superfluous. This method is very suitable for the estimation of tincture of opium. I have been accustomed to use neutral litmus paper as indicator in acidifying the morphine. Farr and Wright recommend to add excess of acid, and titrate back with $\frac{}{10}$ soda, using methyl-orange as indicator.

B. 10 grms. of opium are digested with 30 c.c. water, until all soluble matter has apparently passed into solution. 1.8 gram. barium chloride dissolved in 10 c.c. water is added, the mixture diluted and well stirred. It is then filtered, and washed till practically exhausted. The filtrate is warmed, dilute sulphuric acid added in quantity just sufficient to precipitate the barium, the solution filtered and set to evaporate, sufficient ammonia being added to nearly neutralize. When concentrated to 8 c.c. (.05 grm. ammonium oxalate added) it is allowed to cool, mixed with 1 c.c. alcohol and 1 c.c. ether and then ammonia added till no further precipitate is produced, and a distinct odor of ammonia is present after stirring, and breaking down any lumps that may have formed. After four or five hours the precipitate is collected on counterpoised filters, washed with morphiated water and dried. It is then powdered, washed with chloroform, dried and weighed. A weighed portion of the precipitate is neutralized with standard acid and the percentage calculated. The former method gives a purer morphia precipitate which on that account is more easily accurately neutralized than that obtained in the latter method. On the other hand the neutralization of the solution before concentrating, in order to precipitate resinoid, etc., must be carefully conducted. Should the addition of ammonia be carried rather far, acetic acid must be added to perceptibly acid reaction, so as to ensure that all the morphine is in solution.

The method (B.) has the advantage of being more expeditious, and requiring less work than probably any of the others. The precipitated morphine, however, contains much impurity, rendering the exact neutralization with standard acid somewhat difficult. Yet it is a good practical process, and sufficiently accurate for most purposes. It may be modified so as to give a purer morphine by first exhausting the opium with water, and then adding the barium chloride to the filtrate. This necessitates an additional filtration, but gives an ultimate precipitate containing less color and impurity. In the case of a comparatively pure morphine, such as is usually obtained in the B.P. or U.S.P. processes, it may make little practical difference, whether the correction is by treatment with lime-water or by acidyfying with standard acid; but in the case of a less pure precipitate the difference is very marked, as the following figures show. The purified precipitate obtained in method (B) above described, indicated by washing with baryta water 94 per cent. of morphine, while by titration with $\frac{n}{10}$ acid it indicated only 83 per cent. The same precipitate, after washing with morphiated spirit, indicated by titration 87 8 per cent. of morphine, showing that that method of purification is of very limited value in such a case. It is interesting to note that Dr. Squibb in his "Ephemeris" and Dr. Geisler at the New York meeting have both given numbers which confirm the truth of a note I published (Pharm. Jour.) some years ago, to the effect that the formula of hydrated morphine is $B_8(H_2O)_9$, and not BH_2O as generally stated. Dr. Geisler found 6.8 per cent. as the average loss on drying, $B_8(H_2O)_9$ requiring 7.1, and BH_2O requiring 5.9. This gives 305 as the equivalent instead of 303.

It was suggested by Rutherford Hill at one of the evening meetings of the Pharmaceutical Society, that amylic alcohol might afford a good means of separating the morphine in the assay of opium That is a well-known method of separating small amounts of morphine and similar alkaloids in the analysis of medicines. I have tried it in several different ways, wet and dry, with quite unsuccessful results, largely due to the fact that morphine is very sparingly soluble in that menstruum. It seems scarcely possible to devise an amylic alcohol method which will offer any advantages either as to accuracy or expedition over the best of those presently in use. At least, that is the conclusion at which I arrived.

As regards the extraction of opium with water, my experience does not agree with that of Endemann. It must have been a very exceptional sample of opium which yielded a considerable amount of morphine to dilutt sulphuric acid, after being practically exhausted with water. Excess of acid may facilitate the exhaustion, requiring less water for total extraction, but that is the most that can be said. At all events, I have never met with an opium which did not give an acid reaction, and it would be very strange if the morphine could not be extracted by water from such a drug. It is difficult to state exactly the amount of water required to exhaust a given weight of opium, as it depends on the manner in which the extraction is conducted, and on the degree of accuracy desired in the analysis. Less water is required if the opium is exhausted by the pharmaceutical method of percolation than if treated on an ordinary filter. As a rule I regard the 10 grms. of opium as exhausted when the filtrate or percolate amounts to 120 c. c., the opium having been digested with about 40 c. c. of water before percolating.

I append results of assay of a sample of Turkey opium by each of the methods referred to, the numbers representing the percentage of morphine hydrate :

B.P.	U.S.P.	T. and S.	A.	B.
11.45	11.23	12.20	12.23	12.43

As regards the purity of the precipitate obtained in these processes, the first three were practically pure morphine. A. indicated 98 per cent. and B. 82 per cent. It is not to be inferred that the relative value of the methods is always exactly as indicated above. The B.P. process is specially liable to give varying results, and is generally relatively lower than above. A process which gives a different result, according as it has been conducted on a cold day or a warm day, or has been continued for 48 hours instead of 24, is of limited value. It is a great fallacy to attach value to a method because it gives concordant results in two experiments conducted under identical conditions. In practical working these conditions cannot be attained. This applies very truly to the morphinate of lime and ammonium chloride process presently official in the B.P. Quite recently several chemists working independently have obtained fairly concordant results with the methods A. and B., but considerable discrepancies with the method B. P. I agree with our American friends that it is not a trustworthy process, and that a process on the lines of the U. S. P. is to be preferred. At the same time I should prefer the method of Teschemacher and Smith, or that described as A., as representing more truly the full morphine-content of the opium, and giving nearly as pure a morphine precipitate. Indeed, if it is permissable to wash the variably impure morphine with morphiated spirit on the assumption that the precipitate loses no morphine or always a constant slight amount (a proposition which I doubt), then the T. and S. process is perhaps as good a one as we possess. I would only suggest the evaporation to a definite quantity, say seven grams, instead of a "syrupy consistence," and the addition of .05 grm. ammonium oxalate before precipitating. The method A. has the advantage that the morphine is not exposed to the risk of washing with morphiated alcohol, most of the impurities being got rid of by having the morphine first in a spirituous and then in an aqueous solution, and particularly by neutralizing the latter. The question naturally arises, may the results of these methods of assay not be vitiated by the presence of certain adulterants? It would be much more difficult to adulterate than at first sight appears. Any inorganic salt added with the intention of increasing the ammonia precipitate and neutralizing the volumetric acid, would infallibly give a precipitate with the meconic acid and so draw attention to its presence by the unusual appearance. Probably all the cheaper alkaloids are soluble in chloroform, and would be removed on washing with that menstruum. I am not going to say what I think would be the most likely method of adulteration to escape detection. But in any case of doubt, it would be well to divide the morphine precipitate into three portions; one to be neutralized with standard acid, the second to be washed with baryta water, and the third to be incinerated and the ash weighed. By so proceeding it is scarcely possible that the result could be in error. In conclusion, I wish to express my indebtedness to the writers of the papers before referred to, and to those who took part in the discussions at the New York meetings.—*Jour. Soc. Chem. Ind.*

VIVISECTION.

By H. A. HAUBOLD, M.D.

Assistant to the Chair of Physiology, Bellevue Hospital Medical College, Surgeon to Harlem Hospital, etc.

There is not a single important fact in physiology that does not owe its recognition to vivisection.

The history of vivisection is the history of scientific medicine and surgery.

There is a story that tells of vivisection being practised as early as fourteen hundred years before the Christian era, by one Nebsecht, a native of Egypt. Nebsecht was the son of a famous priest of the Temple of Seti in Thebes. Debarred from lecturing by an unfortunate impediment of speech, he threw himself upon the study of organic life.

It was during his silent musings in the so-called Necropolis, that he conceived the plan of making observation on animals, by dissecting them during life.

Indeed it is claimed by historians, that during that time the heart was seen in action in rabbits who were tied to pieces of board and cut open with scalpels made of flint or stone.

Of course these experiments were carried on in secret, because of religious prejudices prevalent at that time. Nebsecht himself was ultimately discovered at his work, tried by a tribunal of High Priests, and executed for meddling with the "work of the Gods."

The first genuine result of vivisection is illustrated in Harvey's discovery of the circulation in 1616.

The classical picture of Harvey illustrating his discovery to Charles I of England, is a familiar subject to every one. What radical changes this was productive of in the conception of physiology, can be readily imagined.

Up to that time no reasonable explanation could possibly have been conceived of the nutritive processes, the conveyance of those elements of regeneration necessary to the growth and maintenance of the body to the tissues, and the taking up of the products of dissimilation and their elimination by the various excretory organs. Nor could the phenomena of respiration been even remotely conjectured upon. Knowing now as we do, that the circulating fluid is concerned in carrying oxygen to the tissues and taking up carbonic oxide from them.

The later day pioneers in vivisection were Magendie, Brachet, and later Claude Bernard in France.

In fact so extensive were the indulgences of the school of Magendie in 1845-

1850, that an attempt was made by a number of so-called philantropists, to have a prohibitory act enacted, by an appeal to Bonaparte III. This appeal was unsuccessful however.

Magendie, a student of Boyer, ultimately succeeded Recamier in the Chair of Physiology at the College of France. Magendie was a genuine pioneer in experimental physiology, to him belongs the credit of proving that the veins are concerned in carrying off the products of dissimilation. He also showed the necessity of a varied diet, *i. e.*, consisting of organic nitrogenized, non-nitrogenized and inorganic constituents.

He was largely concerned in the early attempts at the localization of the areas in the brain that give motion to certain distinct groups of muscles, a knowledge that to-day enables the surgeon to successfully operate on cases of brain injury and disease.

He also shares with Sir Charles Bell of England, the distinction of proving that the anterior roots of the spinal nerves are concerned in motion, and the posterior in sensation. Still this genuinely belongs to Magendie (1822), as Bell claimed that the anterior roots were concerned in motion and sensation, whilst the posterior roots governed the "secret functions of the body."

Bernard was Magendie's assistant, and later succeeded him as Professor of experimental physiology.

Perhaps no physiologist known to history ever combined the dexterity in operative skill and the ingeniousness in devising methods of investigation, that found their origin in Bernard.

It is to him that we owe our understanding of the glycogenic function of the liver. Although quite different views were held at the same time of Bernard's experiments, by Pavy of London, these views were ultimately reconciled by the truly remarkable observation made by Austin Flint of New York.

Bernard was the first physiologist to make direct experiments upon the pancreas, by establishing an artificial fistula and obtaining the pure secretion of this organ. Before this, no idea of the digestion of fats was entertained.

Again his experiments on the nerves that animate the organ concerned in the production of the voice were a valuable contribution to science.

So much for some of the things that vivisection has accomplished in the direction of a clear understanding of the phenomena that take place in the organism. These are matters of history, facts that go far to denounce the absurd idea that vivisection is a needless, profitless barbarism.

A great many new facts have been developed since the era referred to, all the older discoveries have been verified many times. Some of them are demonstrated yearly at the medical schools much improved and perfected, regarding the details left untouched by the older experimenters. Surely a man who has once seen the heart acting in a living animal, must always have a clear image in his mind when he puts his ear or the stethoscope on a patients chest.

To-day, rapid strides are being made in the field of experimental physiology. But greater and far more important is the fact that the science of bacteriology is only exact when experiments are made with the various micro-organisms on living animals.

That terrible wide-spread disease, tuberculosis is now being clearly understood and placed in the category of infectious diseases, as the result of experiments on living animals. So it is with most all the other infectious diseases, including Asiatic cholera, typhoid fever, all the septic surgical diseases and puerperal fever.

Indeed the whole theory of antisepsis and asepsis is based on the recognition and isolation of the bacteria of septic infection, conclusions arrived at definately and positively only as a result of vivisection or the infection of the lower animals.

And last but not least, the new science of serum-therapy, as illustrated in the use of anti-toxin in diptheria. A disease hitherto more fatal and more largely distributed than small pox, now reduced to a mortality only one half as large as obtained previously.

So here is then the office of that much abused, much slandered art, vivisection. To demonstrate and teach facts previously ascertained, to develop the phenomena of animal life not yet understood, to aid in the clear conception of diseases and the discovery of means for their prevention and cure.

FORMIC ALDEHYDE IN THE PRESERVATION OF MILK AND ITS DETECTION THEREIN.

Since a dilute solution of formic aldehyde (formalin) is being used as a milk preservative, R. T. Thompson has contributed to the *Chemical News* (vol. LXXI, 247) a note on its preservative action and an analytical method for its detection.

The author finds that a 40% solution of formalin is at least four times as effective as a mixture of boric acid and borax, and equal to Salicylic acid; he also notes that boric acid alone is much less effective than when used with borax. To detect the presence of formic aldehyde in milk, 100 c. c. are distilled until about a fifth comes over; this is transferred to a stoppered tube, and about five drops of ammonio-nitrate of silver in 30 parts of water, dilute ammonia being added until the precipitate at first formed is dissolved, care being taken to avoid an excess, then the whole is made up to 50 parts of water. The mixture of milk distillate and silver solution is then allowed to stand from 12 to 18 hours in a dark place, when if formic aldehyde is present, a strong black color or deposit will be produced. A light brown color must be disregarded, nothing short of a distinct black tint being sufficient to indicate the presence of formalin. When as little as two grains of formalin per gallon of milk has been used, a distinct reaction is obtained. The author finds that 4 or five drops of formalin added to 100 C.c. of milk will enable samples to be kept for six weeks, which have given the same results on analysis after that time as were obtained from the samples when fresh. Formalin should therefore prove useful in preserving samples of milk which may be required at a later period for analytical reference. — *Ph. Journal.*

THE CATHODE RAYS.

Two hypothoses have been proposed to explain the properties of these rays.

Some authorities think with Goldstein Hertz and Lenard, that this phenomenon is due, like light to the vibrations of the ether, or even that it is light with a short wave length. Others, Crookes and J. J. Thomson, consider that these rays are formed of matter charged negatively and traveling with great velocity. From a *paper by Jean Perrin of the Paris Academy of Science, we learn that according to his experiments, the facts observed do not easily agree with the theory which regards the cathode rays as ultra-violet light, on the contrary, they are in harmony with the theory which regards them as material radiation.

Their utility in human pathology and surgical diagnosis has been already fully proven.

---

*SCIENTIFIC AMERICAN Supplement, No. 1055, Page 16868

INFLUENCE OF THE CHEMICAL NATURE OF SUBSTANCES AND THEIR PERMEABILITY BY THE RÖENTGEN RAYS.

BY MAURICE MESLANS.

Numerous experiments have demonstrated that certain bodies are transparent to the radiations emitted by the Crookes tube, while others present as regards these rays a relative opacity. I have undertaken to examine what is the relation which may exist between the transparency of these substances and their chemical nature, and if the Roentgen rays may not furnish a new means of investigation in the domain of chemistry. I will here merely indicate the most striking of the results which I have obtained ; they are manifest on an examination of the photographic proofs which I submit to the Academy, and which refer to about fifty substances, simple and compound. These results, though incomplete, seem to me to offer some very definite conclusions, and determine me to pursue this study further.

The transparency or opacity of bodies to the "X" rays is not absolute; the influence of thickness has been already demonstrated, and the role of density has been examined. The specific chemical nature appears to me to present a very considerable influence. I have compared together the various nonmetallic bodies as well as their acid derivatives, and the salts, metallic or organic, which they yield. My experiments have related chiefly to organic bodies, and to their essential element, carbon.

I have been hitherto able to establish the extreme transparency not merely of carbon in its different states, compared to those of other nonmetals. The slight opacity of organic compounds when along with carbon they contain merely the gaseous elements, hydrogen, oxygen and nitrogen. Still this transparence is far from being uniform, and presents very various degrees which appear connected with the chemical function of these bodies.

The photographic proofs which accompany this memoir have been obtained by shutting up a photographic plate in a frame for negatives, and arranging upon the little board which covers the plate the substances whose transparence it was desired to study, lighting up the whole with a Crookes tube, placed at a distance of 20 cm. After an exposure of thirty minutes, the plate and development gave silhouettes of the bodies experimented upon, the relative intensities of which measured their transparence.

Diamond, graphite, anthracite, sugar charcoal give a faint tinge of tonality similar to that of wood or of paraffin of an equal thickness, while sulphur, selenium, phosphorus, iodine, afford very strong images of great opacity.

The organic substances, ethers, acids, nitrogenous substances were easily traversed by the "X" rays, and gave images scarcely perceptible; but the introduction into the organic molecule of a mineral element, such as iodine, chlorine, fluorine, sulphur, phosphorus, etc., gives to the molecule a great opacity.

The sulphates of the alkaloids are in this case. In like manner iodoform is very opaque, while the alkaloids, picric acid, magenta and urea are very transparent. Phthalyl fluoride is much more opaque than phthalic acid, although the molecular weights of the two bodies approximate very closely. The metallic salts possess a great opacity, but which varies with the metal and the acid.

These results are corroborated by the photography of hands and of small entire animals executed by Prof. Röentgen and others. In these proofs the muscles remain transparent. They are, in fact, substances formed entirely of carbon, hydrogen, oxygen and nitrogen. The bones on the contrary give strong images. The opacity is due to the mineral elements which they contain.

The differences in the chemical constitution of the matters forming nerves, blood, etc., will doubtless permit us to obtain their photographic images, thanks to their unequal transparency.

I hope to carry out with more exactitude these researches on definite chemical species, and I purpose studying the relation between the chemical constitution of bodies and their degree of transparency to the Röentgen rays. At present the result which seems established is the transparency of carbon and its compounds with hydrogen, oxygen and nitrogen, and the great opacity occasioned by the introduction into the organic molecule of other mineral elements, especially Cl, S, P, and above all, I.—Comptes Rendus, cxxii, p. 309.

THE HISTORY OF PHARMACY.*

By Dr. Ninian Falkiner.

The history of Pharmacy is the history of the living world, and we must not, in the happy possession of the fruits of science, forget that all we have comes to us from those who have gone before. The great Burke says: "Those will not look forward to their posterity who never look backwards to their ancestors." If this be true that in the ordinary mind there is an intense pride and anxiety to know, in generations back, that our ancestors were honorable men, how much the more shall we, who are the scientific descendants of those who have labored in the past for the advancement of knowledge and for the good of their fellow creatures, endeavor to honor and cherish the memories of those who have left their foot-prints in the narrow pathway of mediæval knowledge.

From the earliest days of the history of mankind, two great necessities for the community have always existed, firstly, that of the minister of religion and secondly, that of the healer of the sick.

Primitive man, gifted with powers of observation, saw that animals when sick were attracted by some instinct which we cannot understand toward some herbs, which relieved their indisposition. The dog doses himself with triticum caninum, the cat revels in the odor of valeriana officinalis, the Indian mongoose is said to procure an antidote for snake bite in mimosa octandra.

Probably from the earliest time man would be led to observe the behavior of animals when suffering from disease or injury. In savage man we must seek the beginnings of our civilization, and it is in the lowest tribes and those which have not yet felt the influences of superior races, that we must search for the most primitive forms of pharmaceutical and medical ideas and the earliest theories and treatment of disease. The lowest form of belief that exists is called Animism, which may be defined as a belief which attributes beath and all forms of disease to magic, which is influenced by the spirits of dead men. Amongst these people we cannot expect to find much of the early development of the science of pharmacy; they were, however, probably acquainted with the properties of some herbs and poisons, as in the case of the obi poison.

So far as we can judge by records of the past, the oldest place in the civilization of the world must be assigned to Egypt. It is most probable that the first kingdom of Egypt existed 8000 years ago; its history is more reliable than that of China, and more recent than that of Assyria and Chaldæa. We require no further proof than the mummies in our museums to convince us that the Egyptians from the period from which those interesting objects date, must have possessed a very accurate knowledge of anatomy, of pharmacy and a skill in surgical bandaging very far suspassing that possessed now-a-days by even the most skilled professors of the art. Mr. Granville says there is not a single form of bandage known to modern surgery of which far better examples are not seen in the swathings of the Egyptian mummies; the straps of linen are found without one single joint extending to 100 yards in length.

---

*Lecture delivered to Pharmaceutical Chemists, and Apothecaries Association of Ireland, March 13th.

Professor George Stokes, librarian to the interesting Dublin institution, Marshes' Library, after his appointment, when getting the place into order, found a box containing a mummy; he sent for me and asked me to examine it, and on doing so found that there was a malformation of the bones of the right arm and fore-arm. I handed the specimen to Professor E. Bennett, who exhibited it at the Academy of Medicine. The famous "Ebers Papyrus" was purchased in 1874 by Dr. Ebers at Thebes. This papyrus contains 110 pages, each page consisting of about twenty-two lines of bold Hieratic writing. It may be described as an encyclopædia of medicine as known and practiced by the Egyptians of the eighteenth dynasty, and it contains prescriptions of all kinds of diseases—some borrowed from Syrian medical lore, and some of such great antiquity that they are ascribed to the mythological ages when the gods yet reigned personally on earth. Among others is given the recipe for an application whereby Osiris cured Ra of a headache. In this papyrus is an example of an old Egyptian diagnosis and therapeutics as follows: "When thou findest any one with a hardness in his re-hit (pit of the stomach, and when, after eating, he feels a pressure on his intestines, his 'hit' is swollen and he feels bad in walking like one who suffers from heat in his back, then observe him when he lies stretched out, and if thou findest his intestines hot and a hardness in his re-hit, say unto thyself, this is a disease of the liver. Then prepare for thyself according to the secrets of the science from the plant pa-che-test and dates, mix them, and give in water."

The Jews were indebted to Egypt for their primary ideas of medicine, but they cast away the ideas of demonology and magic which clouded what was good in the practice of Egypt. The Talmud recommends onions for worms, and wine, pepper and asafœtida for flatulency. The Talmudists are responsible for calling the earth, air, fire and water elementary bodies. In the middle ages the Jews rendered service to the healing art, and had a large share in the scientific work connected with the Arab domination of Spain.

To be continued.

At a recent Pharmacy examination, one of the questions given was:—Define "Bacteria."

"Bacteria," wrote the future Ph. G., "is a ferment capable of decomposing and replacing lung tissue."

And the examining Professor who was marking the paper, paused a few moments to recuperate.—*J. Kussy*

THE lecture delivered April 8th, by Herman A. Heydt, L.L.B., on *Mountain Climbing in Switzerland*, will be published in our next issue.

ONE of our young men after procuring the photo of one of our lady students (and ?) was heard to remark (as he closed the album and laid it inside) "when shall we three meet again." C. W. SMITH.

THE Alumni Journal

Published under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. May, 1896. No. 5.

The Alumni Journal will be published Monthly.

Entered at New York Post Office as second-class matter

SUBSCRIPTION:

Per Annum, . . . One Dollar
Single Copies, . . . 15 Cents.

All copy for publication, or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

All matters relating to publication should be written on one side of the paper only, and sent to the editor,
Alfred H. Mason, 59 Maiden Lane, New York.

All communications relating to finances and business matter in general should be addressed to
Thos. M. Davies, 543 Third Avenue, New York.

All communications relating to subscriptions should be addressed to
Nelson S. Kirk, 9 East 59th Street, New York.

EDITOR PRO TEM.
ALFRED H. MASON, Ph. C., F. C. S.

ASSISTANT EDITORS.
K. C. MAHEGIN, Ph. G.
FRED. HOHENTHAL, Ph. G.
J. KUSSY, Ph. G.
RUD. BOENKE, Ph. G.

ASSOCIATE EDITORS.
CHARLES RICE, Ph. D.
CHARLES F. CHANDLER, Ph. D., M. D., L.L.D., etc.
ARTHUR H. ELLIOTT, Ph. D., F. C. S.
HENRY H. RUSBY, M. D.
VIRGIL COBLENTZ, A. M., Ph. G., Ph. D.
SMITH ELY JELLIFFE, M. D.
GEORGE A. FERGUSON, Ph. B.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

Commencement Exercises will be held at Carnegie Hall, on Thursday, May 7th, at 8 P. M., President Fairchild in the chair.

Music by Rogers' 7th Regiment Band.

Address by Mr. John W. Keller.

This will be the first annual commencement of *Post Graduate Course.*

It is expected that a very large class will be graduated.

Invitations will be sent out by the committee after May 1st.

Our readers will regret, that pressure of other duties has rendered it necessary for Mr. Fred. Hohenthal, Ph.G., to resign his position as Editor. We are all indebted to him for the ability with which he has conducted the work, andh is willingness to help the Alumni on every occasion, and we trust he will still continue to lend his aid in the good cause.

In cheerful compliance with the flattering unanimity of your Committee, that he should do so, the Editor, *pro. tem.* undertakes to relieve them in an emergency and endeavor to conduct this department of the Journal, so as to make it worthy of the Alumni, and of our College. Fully occupied with his daily duties, and also holding honorary offices for the advancement of pharmacy and allied subjects, this means further sacrifice of duties to his family, and burning the midnight oil, and as "all work and no play; makes a dull boy," he assumes the office temporarily, to ascertain to what extent such sacrifice is necessary. Always devoted to the interests of his younger friends and fellow students, if his labors as an amateur in the cause, are of service to them, without danger to himself, he is willing to make the experiment, relying upon the hearty co-operation and assistance of those who are willing to be associated with him in the work.

> "Content if hence th' unlearn'd their wants may view,
> The learn'd reflect on what before they knew."

The new prospectus of the College for 1896—'97, will be issued about June 1st.

Every person who knows him, and especially those associated with our College, will rejoice that Professor Chandler is making rapid recovery from the surgical operation recently undergone.

OUR COLLEGE. A physician (editor of one of the leading medical journals in this city), remarked: "I consider a two years course of study in the New York College of Pharmacy, the finest training any boy could have, and if I had a son who intended to become a lawyer, doctor, engineer or join any of the professions, I should give him two years in your College first."

We may all feel gratified by this, but those of you who in a few days will receive that qualification which affiliates you with our College as your Alma Mater, will feel proud that you have by your hard work, honestly attained such a distinction, and with your foot placed firmly on the first step of the ladder, go on increasing that knowledge, determined to be students all your lives, knowing that the future of the institution depends upon the efforts of its Alumni to keep it in the position which it now justly claims as one of the most important Colleges of Pharmacy in the world.

HAVING successfully graduated, your first duty will be to join the Alumni Association of your College.

WE congratulate Charles H. Bjorkwall '95; Charles E. Dosh '95; Harry B. Ferguson '95; George H. Jorgensen '95; Joseph F. McCarthy '93 and Herman Walter '95, who were elected members of the College at the last meeting of the Board of Trustees.

THE College was well represented at the Seventeenth Annual Exhibition of the New York Microscopical Society, April 14th. Exhibit No. 33, in alcove III., by members of the Classes of '96 and '97, being quite an attraction. Professor Jeliffe and Alfred H. Mason were also exhibitors.

ANNUAL Meeting of the New York State Pharmaceutical Association will be held at Buffalo, June 23, 24, 25, George J. Seabury, President.

THE Fifth Annual Commencement of the Brooklyn College of Pharmacy took place April 16th at the Association Hall, Brooklyn. Twenty-five graduates received diplomas, and nine members received certificates of examination. "Trustees" gold medal was awarded to Harry B. Palmer, of Asbury Park, Silver medal to John Scheller and the first "Brundage" Pharmacy Medal to E. Clayton Woodcock, who delivered the Valedictory address. The Alumni prize was awarded to L. G. Rowlenson, senior class.

A humorous and practical address to the graduates was delivered by Hon. Henry A. Powell (who was made L.L.D. for the occasion). Those on the platform remained seated, whilst the candidates irregularly walked down the centre of the hall to their places. The hall was decorated with the College colors, and so were the ushers—a good miscellaneous concert helped to make a most enjoyable entertainment, at which about 1500 persons were present.

AT a College Meeting held on April 6th, the following were unanimously elected to serve as the City Board of Pharmacy for the ensuing 3 years: Drs. Cyrus Edson, Wm. Balser, Diekman, Jeliffe and Mr. John Oehler, the former two being elected on a separate ballot as a mark of courtesy for their 21 years of active service.

IT may be interesting to note that attention was called to the fact that nearly 40 per cent. of the members present at the above meeting were Alumnists.

UNDER the guidance of Prof. Rusby as Chairman of the Committee, the meetings for the reading of Scientific papers next season will undoubtedly bring the members of the College into closer relationship and ultimately prove advantageous.

Alumni Column.

"ALUMNI DAY."

On May 6th, the Alumni Association will tender its annual reception to the students.

For the past nine years, it has been customary to select a day annually called Alumni Day, for the purpose of becoming acquainted with the students. In former years talent was hired for the occasion, but this year we will be entertained by ladies and gentlemen who have very kindly volunteered their services. The Alumni Day Committee is composed of Messrs. Herold, Searles and Burger. Last year we had a stage built in sections, so that we could take it apart and use it again.

Members of the Association will meet at the College on Monday, May 4th, and put it together. The next day Mr. Searles, who has charge of the decorations and who has been on this committee every year for the past nine years, will put his men to work and decorate it with flags and bunting. The other members of the committee have been very busy securing the services of their, and the Alumni's friends for this occasion. Miss Nellie Gaffney of New Rochelle, will recite some humorous Irish pieces; The College Glee Club, Selections; Mr. Throckmorton, Recitations, and Mr. E. Bischoff, Solos, these are only a few of the "good things" in store for those who are fortunate enough to attend.

During the entertainment the Roll of Honor will be read by the Chairman of the Exam. Committee. Following this, the President will award the Alumni prizes to the Juniors.

After the entertainment the Annual Meeting of the Association takes place, when, as usual, officers will be elected for the ensuing year. All members are requested to remain and attend the meeting as very important business will be transacted. Members and students are cordially invited to attend the entertainment and bring their friends.

Hieronimus A. Herold,
Chairman Alumni Day Committee.

At a recent meeting of the senior class a committee was appointed to work with a like committee of the Class of '97 to wait upon the College officials that they adopt the Class Pin of '93, '94, '96 and recently adopted by the '97 Class, as an official N. Y. C. P. pin. A report of the committees has not yet been given.

MEETING OF THE ASSOCIATION, APRIL 8th, 1896.

The Meeting was called to order by the President, 9 30 P. M.: present Miss Agnes P. Mahony, '95, Messrs. Henning, '76, Stover, '83 Dr. Diekman, '89, Heller, '93, Hoburg, '93, Herold, '94. Kirk, '94, Erb, '94, Gies, '95, Dürr, '95, and Ferguson.'95.

The minutes of the previous meeting were read and adopted.

The President appointed the following gentlemen the "Alumni Day Committee:" H. A. Herold, Chairman, A. C. Searles, and G. F Burger.

The following report of the "Entertainment Commtttee" was then read by the chairman of committee, W. S. Kirk.

"On this, our second monthly report, we take pleasure in announcing that owing to our acquired familiarity with the sociables, we have made them less expensive and more popular than last month.

During March the following entertainments given were under our auspices: March 4th, Smoker; 18th, Reception; 25th, Card Party.

For this month we respectfully submit the following for approval: April 1st, Smoker, 15th Reception; 22d, Smoker; 29th, Smoker; Nelson S. Kirk, Chairman, R. Gies and G. F. Burger, Committee, Motion made and carried that the report be accepted and placed on file.

Motion made and carried "that the Association award the customary gold, silver and bronze medals to the graduating class," President Stover appointing Mr. Henning as a committee of one to attend to same.

Motion made and carried "that a committee be appointed to purchase the same prizes for the Junior class as were awarded last year," Mr. Graeser being appointed as a committee of one.

Motion made and seconded "that the usual 'Examination Committee' be appointed to rate the Junior papers for prizes": motion carried.

Following is the committee appointed:—Dr. Geo. C. Diekman, Chairman, and Messrs. Hoburg, Oehler, Kreuder and Ferguson.

Motion made and carried to have committee appointed to audit the treasurer's accounts; committee essrs. Gies, Heller and Kirk.

Motion made and carried to have the annual meeting connected with the Alumni Day celebration.

Motion made and seconded that "Alumni Day," be made "Alumni Night;" motion lost.

Motion made and carried that "Alumni Day" celebration be held on May 6th, 1896, at 2 P. M.

The following gentlemen were proposed for membership in the Association, and having qualified, were elected, the Secretary casting one affirmative ballot, electing the same; viz. Joseph Siegmann,'93, 213 East Fifth Street, New York ; Abraham Weiss, '94, 709 Sixth Street, New York ; Fred. Borggreve, '92, 1218 Broadway, New York, Messrs. Kirk and Herold acted as tellers.

Motion made and carried that Mr. Kirk and the other members of the "Entertainment Committee" be extended the thanks of the Association for their services.

Motion made and carried that a committee be appointed to look into the matter of an "Alumni Button." President Stover appointed Mr. Kirk, Chairman, Mr. Henning and Miss Mahegin.

There being no further busin the meeting adjourned. Respectfully submitted.

Wm. A. Hoburg, Jr., Secretary.

OUR SOCIAL MEETINGS.

SMOKERS.

The Smokers held March 25th and April 1st were as successful as their predecessors. The Alumni Room on each occasion presented its cheeriness and homelike appearance. The guests were never in a more jovial mood, and our famed piano verified the assertion that its music is tuneful and harmonious. Owing to an oversight the names of the participants were not obtained.

LECTURE.

Herman A. Heydt delivered a very interesting Lecture on Wednesday evening, April 8th, entitled "Mountain Climbing in Switzerland." By 8 o'clock every seat in the ampitheatre of the College contained an occupant, the "fair sex" being well represented. By the aid of stereopticon views Mr. Heydt demonstrated the hardships and trials of mountain climbing, especially that of the mountain "Yungfrau" in Switzerland.

After the lecture a business meeting was held in the Assembly Rooms of the College, President Stover officiating. Among those present were President Stover, Ex-President Graeser, Treasurer Henning, Secretary Hoburg, Dr. Diekman '88, Harry Heller, '93, N. S. Kirk, '94, L. Erb, '94, H. A. Herold, '94, H. Kreuder '94, T. Davies, '94, J. Jorgensen, '94, R. Gies, '95, A. Meyer, '95, G. Dürr, '95, A. Mahoney, '95.

SOCIABLE.

The last sociable of the season was held in the Assembly Rooms of the College on Wednesday evening, April 15th. Dancing commenced at 9.30 o'clock sharp and terminated long after the hour of midnight had been recorded. The ladies present presented a fairy-like appearance and their costumes were significant of springtime. During intermission vocal selections were rendered by Miss Zimmermann, the College Glee Club and Mr. Gies, '95. The programme was as follows : Lanciers, Waltz, Schottische, Varsouvianna, Two Step, Waltz, Lanciers, Waltz, Polka, Yorke, Waltz, Schottische, Lanciers, Two Step, Waltz.

Among those present were President Stover, Treasurer Henning, E. Lohr, '93, Floyd Stage, '93, J. S. Stage, '93, J. Siegmann, '93, N. S, Kirk, '94, T. E. Davies, '94, C. W. Race, '94, F. Cowes, '94, R. Gies, '95, R. Boenke, '95, H. B. Ferguson, '95, G. E. Manville, '95, C. P. Gould, '96, B. Gulick, '96, N. Brownell, '96, G. H. Carter, '96, R. Zeiner, '96, H. J. McKellar, '97- C. E. Bagley, '97, C. L. Pirver, '97, R. Fraser, W. S. Burger.

The ladies' roll was graced by Miss K. C. Mahegin, '89, Mrs. R. Gies, Mrs. A. Henning, Mrs. S. B. Reed, Mrs. R. Fraser, Mrs. J. Meagher, and the Misses K. Tisch, E. Ruckert, C. Ruckert, C. Smith, F. A. Ives, F. R. Clark, M. L. Zeiner, L. Williamson, J. A. Stage, L. M. Stage, B. Kauffmann, R. Siegmann, A. Speckmann, A. Zimmerman, M. Meares, S. Meares, E. Lotze, B. Gledhill, E. Gledhill and many others whose names the reporter failed to obtain.

NEWSY AND PERSONAL.

F. Borggreve, '92 has been elected a member of our Association. Thanks to the efforts of Mr. Kirk.

Dr. Diekmann, '88 honored the Alumni with his presence at the meeting held April 8th.

From the wilds of Jersey we are informed that A. Frank, '88 has become a benedict.

Geo. F. Burger, Ph. G.
115-119 West 68th Street.

Before this has reached the eyes of our readers, we will know whether or not our endeavors have been crowned with success. The Senior class has labored under numerous inconveniences, nevertheless we are endeavoring to capture the trophy as the leading class in the history of Our College. C. W. Smith.

College Notes.

'93 NOTES.

COMMENCEMENT! That magic word which for every Ph.G. signifies only the consummation of that upon which his hopes and aims were concentrated for two years, is again upon us. Two years, which sometimes seemed long, but are now among the most cherished recollections of one's life. Our boys are now so widely scattered that it is next to impossible to again bring them together as they were on our Commencement. But what would we not give to again have them all together, either arranged according to feet and inches, ã la Atwood's excellent assorting process, or all jumbled together, Uhle next to Sasse and Heller beside Hopkins. But I had best "come out of the clouds," for 'tis a vain dream, and the best I can hope for is an occasional letter from some of the boys, or a less than occasional sight of a familiar face.

While it is true that our interests are now so widely different, and not at all the same as they were then, causing as some might claim, a feeling not the same as it used to be, still I maintain that for the time being, our interests would be identical, the renewing and strengthening of our old friendships. How many of you will come to the Commencement of the Class of '96? You will all be welcome, and assured of an evening which will bring memories of the celebrated year of '93 back to you in a manner which will make you feel that the boys think of each other still.

TEDDY EDLICH was seen borrowing a dose of bromo the other day, and as he sadly put his hand up in the neighborhood he thought his head ought to be, he remarked that night-keys have the hardest work to do in the morning.

THE study of medicine seems to agree with our friend Chas. Schlichter. He is becoming so stout that there is no danger of a Jersey Zephyr blowing him about like a corn-stalk. He seems to think that a man never wants to be an angel if he can make a living at anything else.

Now may we look to the rapid advancement of all interests connected with the College. Messrs. Hoburg and Tannenbaum have been elected members of the College.

JOS. P. CARROLL is with C. M. Rawlins & Co. at 2090 8th Avenue.

A. MOLINA, the dark and mysterious, is studying medicine at Bellevue.

EMIL BOHATA is with Bohmfalk, 54th Street and 2d Avenue.

SAID Tanny, with a far-away dreamy look in his soulful eyes: "There are two things in life a man is never prepared for—twins."

OUR little yodler Huber says he has only now found out that life is worth living since he has subscribed for the journal.

IN reply to a request of mine to send me some news about himself, Bolduan modestly answered that he did not think his doings would interest the boys. If any other man is laboring under that misapprehension let him cast it from him forthwith. Bolduan is going to study medicine at the P. & S., and no doubt will be on the honor roll there just as he was at our College. He has gotten to be quite an analytical chemist, and has a fine labratory, with all improved apparatus.

The adoption by the class of '96 of a class pin of the same design as ours, was, in a measure, due to Bolduan's efforts, and he is very enthusiastic in getting up a movement to have all classes adopt it. The design originated, I believe with '91, and if all classes fell in line like we did, we would soon have a characteristic College pin which would identify an N. Y. C. P. man anywhere, no matter of what class he was.

"OLD SPORT" ZWINGLI has lifted his melodious voice and let some news of himself drift New Yorkward. He is still managing Kent's Pharmacy, 159 Main Street, Paterson, and say he is very well for and old married man. He wishes me to agitate the question of having a rousing characteristic dinner. As soon as Commencement and the Outing are over I am going to start in; so be ready boys and those who are willing can begin now to send me their full addresses so that I can compile a list.

CARL A. MEISNER is still rolling pills and selling stamps. His address is 208 E. 75th St.

SCHAAF BROS. now have two stores, one at 3409 Third Avenue and the other at 798 Eighth Avenue.

EUGENE F. LOHR, PH. G.

CONRAD GLOGAN, '94 is now the proprietor of Cleaver's Pharmacy on Summit Avenue, Jersey City. If he will now confine his thoughts on a good insecticide that will annihilate some of those notorious "Jersey Mosquitoes" his fortune will be made. Try it old man. N. S. KIRK.

'94 NOTES,

HAVING to use the popular expression, "been jumped on" considerably, for the brevity in my notes in the last issue, I will take this opportunity of setting myself right. Early in March I made an examination of the subscription book, which revealed a host of delinquents, many of them being prominent men, and as this state of affairs cannot be remedied any too soon I resolved to "shake them up" at once, feeling confident that my colleagues, Lohr and Burger would make up any deficiency that might result from the aforesaid brevity. These delinquents take up so much of my spare time, that I think eventually of adopting the tactics of my friend, Goodfellow Gunning, editor of the *Tombstone Inscription*, whose favorite and effective means of collecting subscriptions is to fire a load of shot into the delinquent subscribscribers as they pass his door, which invariably reminds them quite forcibly of their tardiness. Are you one of these delinquents? If so, kindly settle up at your earliest opportunity, so that I may not be justified in giving this "song and dance" again.

BY the way, the N. Y. C. P. Cyclers have resumed their runs, and would be pleased to hear from any of "Our Graduates" who are devotees of the wheel, and desire to join them in a run under the Blue and Gold.

I UNDERSTAND that '96 and '97 are going to urge the College authorities to adopt the Class pin, used by '92, '93, '94 and '96, as the official Class pin. It is more worthy of the support the Alumni members will give it.

I HAVE always regretted that '95 bolted, for our pin is recognized as the N. Y. C. P., or to be "up to date," the C. P. C. N. Y. pin everywhere.

THE Alumni Sociables have proved themselves to be proper affairs, in the right direction, affairs which are going to make it more active than ever. Already several old graduates have joined us and a host will follow suit.

THOUGH sorry I cannot announce the course of the Reception Committee's work next season. I feel convinced that they will be authorized to carry on their gatherings in much the same manner as has already predominated, with possibly greater facilities. These sociables, especially the receptions are popular to the under graduates and I hope in the future will prove more so to the Alumnists and graduates.

BURGER is continually expanding his submaxillary area with schemes, his latest one is an Alumni Nutting Party to be held next Fall. Quite an idea, and George will doubtless expound his ideas in such a way as to make it a go.

I NOTE with pleasure the addition of two more '94 men to the militia of their respective States. Col. Louis B. Wade of Frasers is a private (with hopes) in our crack Seventh, while Carl Richter occupies in the Second, N. G. S. N. J. the rank which Davies refers to as "horse pistol steward. Thus at the present time we have T. M. Davies, '94, 8th Reg't, N. Y. ; E. C. Webb, '93, 8th Reg't, N. Y. ; L. B. Wade, '94, 7th Reg't, N. Y. ; C. Richter, '94, 2d Reg't, N. J.

AFTER leaving his position in Mott Street, I mean Mott Haven, Bernard Mueller accepted another in Fleischmann's N. Y., which has proved to his liking to such an extent, that he will probably locate there shortly.

TUNIS F. COOK is with Speth, Cornelia Street and Broadway, Brooklyn, and Lauffer is with Sautter, Bedford Avenue and S. 5th Street. Have not as yet had an opportunity to interview them.

FRANK E. EELY has joined the now large list of '94 Benedicts and is with Lord's Pharmacy at 36th Street and Seventh Avenue. Again we extend our best wishes.

IT has become my sad duty to inform my class-mates of the loss of one of our goodly number in Fred. W. Drenckhahn which occured in February. He will be remembered as a friend, who, in the proverbial balance, would never be found wanting. His demise robs his family of a devoted son and brother, whose future was one of the brightest. May his soul rest in peace.

GEORGE H. BORN, '86 and Henry G. Born, '94 have together purchased a store on Bedford Avenue, Brooklyn. George has been in business for himself for some time, and will doubtless find a good partner in his brother, who has the reputation of "punching pills" as fast as the next one.

GEORGE S. TOMLINSON is conducting the store formerly controlled by his father, the late George G. Tomlinson on Amsterdam Avenue and 102d Street.

NELSON S. KIRK, PH. G.
9 East 59th Street.

'95 NOTES.

THE lecture "*Mountain Climbing in Switzerland,*" which was delivered by H. A. Heydt, L. L. B., on Wednesday, April 8th, was one of the best attended lectures of the season. It was handsomely illustrated by stereoptican views; those of special interest to the audience being, "Moonlight Courting," in two views, and, "Spooks in a Graveyard," which included a skeleton dance. One thing noticeable about the audience was, the large number of ladies present, who were undoubtedly attracted by the report of Mr. Heydt's last lecture.

Of our boys there were present Messrs. Dürr, Gies, Drollinger and myself.

ON Wednesday evening, April 15th, the last reception of the Alumni Association was held in the Herbarium, the evening was enlivened by a number of recitations and songs, which were highly appreciated.

Gies favored the guests with a few solos, accompanied by Walter on the piano.

Our representatives were, Messrs. Bjorkwall, Gies, Ferguson, Manville, Walter and myself.

LOST.

MISS Mahony and Messrs. McLellan, Meighan, Merritt, Meyer, W. Miller, Jr., Morse, Murray, Musgrave, B. E. and G. A. Oats, Ohlandt, Owens, Parker, Pennington, Prevost, Prote, Raymond, Reynolds, Richter, Roberts, Roeber, Rohne, Rose, Ryan, Sawyer, Sharnikow, Schwallie and Sheehan. Any information relating to the above named lady and gentlemen will be thankfully received.

FOUND.

AQUARO was married some time ago, and is manager of the store corner of James and Madison streets, and owned by Mrs. Benedetti.

SOMETHING new—Broesler is a papa.

W. D. BROWN is with Weidenfeld, 1928 Third avenue.

FRED. L. FLICK has resigned his position at Eschmann's Pharmacy, 9th avenue and 51st street.

L. I. CHEREY has purchased the store formerly owned by A. Paulini, at 104 Canal st.

RUD. BOENKE, Ph. G.,
437 East 87th Street.

THE floor of the Pharmacognosy room is rather slippery, is'nt it Hoyt? Never mind it won't hurt long. C. W. SMITH.

'97 NOTES.

ON one dark and moonless night last month, a heavy detachment of our class-men sallied forth to Barnum's show, under command of our President, the gallant Colonel McKellar of South Carolina. To this gentlemen's expert generalship, was due the light list of casualties.

The boys had a good time and had nearly everything their own way. But they finally received one damper in the fifth auricle. It was after a particularly daring feat by one of the performers, that we arose to our feet, and gave vent to a mighty slogan. The band instantly ceased playing, the cheeks of the audience blanched, and a panic was eminent, when a small urchin saved the house by yelling: "Ah dey ain't no Zulus, dems de Protectory mugs, see." Confidence was restored, smiles rippled once more o'er the faces of the assembled multitude and the band played on. "We seen our duty, and we done it" (we left). We had a glorious time!

YOUR reporter took occasion to interview the fair Miss Johanna, in order to see just what impression we had made upon her and her colleagues in the menagerie. This was found to be most favorable, the only dissention was the hyena, and Miss Johanna said he was envious because he had caught cold in the parade and was unable to yell.

Ah! but here I am going to let out one little secret on the Colonel.

Miss Johanna told me in a burst of extreme confidence, that she was much smitten with our gallant Colonel. In her own words: "Thot gintlemen what youse call the Colonel, is a bute. Mama! waudn't oi loike to elope wid him!" Then she became silent and would speak no more.

CHOICE of Weapons?—W-e-l-l—let us make it broadswords at twenty paces and corn-stimulant on the side.

MR. "WOOLY" was overheard to remark that our friend Mr. Buchle has a *strapping* name, and none hit him.

AFTER diagnosing "Wild Wooly's" case we find that he is suffering from intermittent rushes of "fair Gussie" to the heat. He will pull through.

R. F. NEOFFATT of the class of '97 has just accepted a position at White's Pharmacy in Long Island City.

R. W. MILNE,
20 West 32d Street.

Senior Class Notes.

N. Y. C. P. '96.

DEUSCHBERGER met with what might be called a severe accident the other day, At least its the general class opinion that "'Twas a close shave."

I AM positive the second section of the College joins heartily in extending thanks to Prof. H. Ferguson who so kindly and ably filled the difficult position of Materia Medica Quiz Master during the absence of our Prof. Rusby. Mr. Ferguson not only proved his ability in this capacity, but obtained at once a true friendly feeling with the students and we feel greatly indebted to him for the earnestness shown. We wish him the brightest success in his future undertakings.

WE are indebted to Messrs Wm. R. Warner & Co. for the valuable hand-book presented to each of our students, entitled "Therapeutic Reference Book." It is gotten up in a very unique style and proves a source of valuable information.

WANTED.—Any detailed information concerning Mr. F. W. H. of Section 1. Seen on Sunday, April 12th, 8 o'clock P. M. in Hoboken N. J., "rushing the growler." Last seen on said day 11 o'clock P. M. with said "growler" on a synonomous expedition bearing a '97 class pin of the Hoboken High School. The pin is said to have belonged to a 14 summer lassie of that "country."

ANOTHER luxuriant growth of lilacs manifests its presence in Section 2. Friend Terry is the possessor.

AT a recent meeting of the class it was decided that a banquet be held in preference to a ball. Under the circumstances this is undoubtedly a wise conclusion as the financial condition of many of our students at the present time would not permit the latter to be carried out in a manner justifyable to the PH. G's of the class of '96. A committee was appointed to superintend arrangements, select the "battle ground," etc., and the affair will take place on Tuesday evening, May 5th. Let it be hoped that not a student be so unfortunate as to fail in his examination and not enjoy the pleasures of that evening.

A SENIOR student of the College of Pharmacy of one of our sister States being asked, "what is Oil of Spike," replied "Its and oily liquid obtained from railroad spikes." They say he graduated.

ONLY five of our boys failed to attain the required rating in practical pharmaceutical work. The first prize of that department will be awarded by special examination of a certain number of those having the highest rating.

WE are indebted to Prof. Coblentz for the special evening lecture on prescription compounding given us a short time since. We regret the disturbance which ensued and the gentlemen implicated in the "performance" acknowledge the size of the torpedoes to have been somewhat above regulation.

ONE of our officers wishing to indulge in a little of the pleasures of correspondence answered by publication an "Ad" in the Herald giving the college address and signing a ficticious name which chanced to be identical to that of one of our students. The latter party is now in need of a private secretary.

THE exchanging of Photo's has of late been the order of the day. The workmanship of the club rate cabinets of the Dana Company was not a decided "Ad" to the house as many of the students are very dissatisfied.

BY permission of our "New Editor" I would like to announce to section 2 which elected me as their reporter that notwithstanding my name has not been published in previous editions of the Journal yet my items have each and every month been published fully or in part and when not signed by their proper author was given credit to Mr. Morris reporter of section 1. Undoubtedly the error was a misunderstanding at the press office.*

A NUMBER of the boys attended Barnum & Bailey's "Greatest Show on Earth" and carried with them the official N. Y. C. P. flag. The clown nearly spoiled their evening's entertainment by asking if they were members of the New York Catholic Protectory.

THE last hop of the Alumni Association was quite largely attended and a very pleasant entertainment given. Our famous Glee Club captured several applauds.

CHAS. WETMORE SMITH.
72 West 49th Street.

*ED.—Very sorry, but please do not write your report upon the back of telegram forms, sign your name and address in full, and we will all try to give you the credit you so richly deserve.

TO THE CLASS OF '96.

As commencement approaches and with it the parting hour for you who have for a number of years studied side by side, and cultivated, for each other, a feeling of the warmest and truest friendship, the thought must often present itself that many of you go forth from college into the world in paths entirely opposite, perhaps never again to meet and greet one another.

It is with feelings of profound pleasure intermingled with those of sincere regret, that you appear together for the last time as a class. How dear to you is your Alma Mater, the benign mother whose glory you share, and whose praises you will sing, whether you remain here in the city, or are called to regions far distant! How dear to you are your associates; how you prize their friendship and good fellowship! And, permeating all these sentiments, how deep is your regret at parting with the scenes of, and the associations formed at College.

And yet, year after year, students graduate and return to their homes, leaving no trace of themselves, no evidence that they once were students of our College, beyond the memory of their names.

How pleasant it would be if all our graduates would avail themselves of the opportunities offered for maintaining a constant relationship between themselves as classmates, and towards their Alma Mater, as men, ready to extol her virtues and to rejoice in her ever increasing influence.

And yet, how few comparatively avail themselves of the opportunities presented.

Join the Alumni Association! In no other way can you so strongly retain the sweet remembrances of your college days, in no other way can you more highly honor your Alma Mater.

J. Kussy,
629 Broad st., Newark, N. J.

THE SMART DRUG CLERK AND THE GUILELESS FARMER.

Funny mistakes happen in drug stores. Here is one that took place in Rockville, Conn., the other day.

A prominent druggist took the agency for an asthma cure, and, in order to boom the remedy, made a display of the medicine in his window. His first order was a small one, and, to make a fair display would require a good many packages which he did not possess.

This difficulty was easily surmounted. Procuring a lot of wrappers, and getting a number of wooden blocks of the right size, the enterprising druggist wrapped the blocks up and made them to appear like the regular packages.

The display in his window was a good one, and he received many compliments for his skill at window dressing.

A man from the country—a farmer—saw the many packages and read the card, which stated what the contents would cure. As the man was troubled with this annoying disease, he sauntered into the pharmacy and asked a clerk for a package of the medicine. The clerk forgetting himself, gave him one of the dummy packages from the window arrangement, and the farmer went his way feeling elated that he now had something to cure his asthma.

The following night at about 12 o'clock he arose from his bed and sought his new purchase. He tried hard to apply the contents of the package, but it was of no avail. At his first opportunity he went to the drug store and asked for directions. The clerk was equal to the occasion.

"Saw the wood," said he, "and use the dust mixed with vinegar in equal parts."

Again the farmer went his way rejoicing, and he hasn't been heard of since. —*From Market Report, abstracted by J. Kussy.*

Miscellaneous Items.

CURIOUS PRESCRIPTIONS.

Having slight pecularities of interest to dispensers:

No. 1.

℞	Quin. Sulph	gr. iij.
	Ac. Hydroch Dil	m v.
	Am. Carb	gr. v.
	Aq. Chlorof	℥j.

The only satisfactory way of dispensing this is to neutralize the acid with the am. carb., rub the quinine down with mucilage, and add one to the other.

No. 2.

℞	Bismuth Carb	gr. 120.
	Potass. Bicarb	gr. 90.
	Sp. Am. Arom	ʒ iij.
	Tr. Cardam Co	ʒ iij.
	Aq. Calcis ad	℥ viij.

The color of the tinct. card co. in above is discharged.

No. 3.

℞	Liq. Potassæ	
	Sp. other Nitros, aa	℥j.

This requires an amber color with a slight precipitate.

No. 4.

℞	Zinci Brom	gr. 16.
	Sodii Brom	℥ss.
	Tr. Nucis Vom	m 64.
	Aq. ad	℥ viij.

A flocculent precipitate occurs in this, as two drops of acid hydrobrom is sufficient to clear it, the addition is recommended.

No. 5

℞	Cocain Hyd	gr. iij.
	Argent Nit	gr. ½.
	Aq. Dest	℥ ss.

In dispensing this, silver chloride is precipitated, which is evidently not intended, therefore nitrate of cocaine should be used in place of the hydrochlorate.—*Ph. Journal.*

THE Metrological Society of America have introduced a Bill at Washington, to make the metric system of weights and measures the legal standard of the United States in 1901.

A WASHINGTON drug clerk was lately put in jail for receiving mail under a fictitious name. A decoy letter from the secret service entrapped him.

THERE is a street in the aristocratic portion of the city of Canton, China, called "Physic street." It is the abode of the wholesale druggists.

THE OLDEST PRESCRIPTION IN THE WORLD.—In the course of a deeply interesting lecture by Prof. Macalisher, at Firth College, Sheffield, on "Studies in Ancient Egyptian Literature," the lecturer stated, that, among the earliest prescriptions was one for a "hair wash", for promoting the growth of the hairs for the mother of Chata, second King of the first dynasty, who reigned about 4000 B. C. It is as follows:

Pad of a dog's foot	1
Fruit of date palm	1
Ass' hoof	1

Boil together in oil in a saucepan. Directions for use: Rub thoroughly.—*Montreal Ph. Journal.*

[When were saucepans first used? ED.]

THE OLDEST BOTANICAL WORK is sculptured on the walls of a room in the great Temple of Karnak, at Thebes, in Egypt. It represents foreign plants brought home by an Egyptian Sovereign, Thothmes III., on his return from a campaign in Arabia. The sculptures show not only the plant or tree, but the leaves, fruit, and seed pods, separately, after the fashion of modern botanical treatises.—

Newcastle Chronicle.

PHARMACOLOGY is the basis of therapeutics, and of all rational treatment, and that medical man who does not know the principles on which he prescribes, is an empiric, and little less than a quack.—*Murrell.*

THE WESTERN CHEMISTS' ASSOCIATION (of London), have unanimously adopted the following resolution, and sent it to the various Medical Colleges:

"That this meeting is of opinion that the practice of prescribing proprietory medicines is becoming so extensive as to be seriously injurious to the progress of pharmacy and detrimental to the best interests of the medical profession, and considers it to be most desirable that all prescribers should adopt the practice of writing prescriptions without the name of any particular maker attached, so that they may be dispensed by any pharmacist from recognized and published formulæ."

DEEP and rapid breathing is recommended as a means of stopping hiccough.

IN the new edition of the British Pharmacopœia, the metric system of weights and measures will be adopted.

THE Alumni Journal

NEW YORK COLLEGE OF PHARMACY
ALERE FLAMMAM
ALUMNI

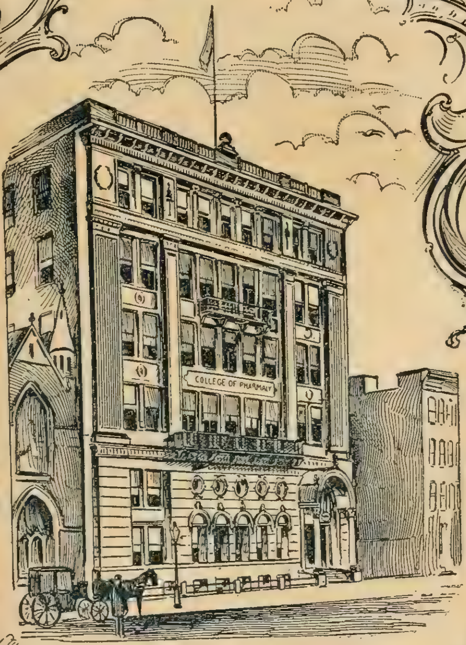
Entered at the New York Post Office as second class matter.

VOL. III. No. 6.

June, 1896.

Contents:

JOINT PHARMACOLOGICAL INVESTIGATION BY THE AMERICAN MEDICAL ASSOCIATION AND THE A. Ph. A., - - - - 129
By H. H. RUSBY, M. D.
WHY LATIN IS USED. - - - 131
JUSTIFIABLE USE OF PRESERVATIVES, - - - - - - 132
By JOSEPH F. GEISLER, Ph. C., F. C. S.
THE VALUE OF A MICROSCOPE, - 134
By L. A. WILSON, Cleveland, O.
THE HISTORY OF PHARMACY, 134
(*Continued.*)
By DR. NINIAN FALKINER.
APPARATUS FOR THE DETECTION OF BORIC ACID, - - - - 137
By W. M. DOHERTY.
BUNSEN ANTICIPATED, - - 138
"CHARAS," The Resin of Indian Hemp, 138
By Mess. WOOD, SPIVEY and EASTERFIELD.
SIXTY-SIXTH ANNUAL COMMENCEMENT of the COLLEGE OF PHARMACY of the CITY OF NEW YORK, 139
ADDRESS TO GRADUATES, - - 140
By JOHN W. KELLER.
ROLL OF HONOR, - - - - 143
LIST OF GRADUATES, - - - 145
EDITORIAL, ... 147
O. J. GRIFFIN—Biographical, - - 148
THE SUMMER OUTING, - - - 149
ALUMNI COLUMNS, - - - - 150
ALUMNI ASSOCIATION, - - - 151
ANNUAL MEETING, - - - - 151
PRESIDENT STOVER'S ANNUAL ADDRESS, - - - - - - 15
COLLEGE NOTES, '93—'94. - - 15
" " '95, '96. - - 15
NEWSY AND PERSONAL, - - 15



PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . .

"Auld Lang Syne."

The person who was unfortunate enough to become seriously ill was obliged to uncomplainingly ingest the vilest of decoctions and infusions, a silent but expressive shudder being the only protest possible. Since those days the patient has learned to demand more palatable methods of medication. ELIXIR LACTOPEPTINE now renders it easy for the physician to meet this reasonable demand, as it effectually disguises the unpleasant taste of unpalatable and nauseous remedies. The contained Lactopeptine also assists in the retention and absorption of other medicaments because of its well known digestive potency. The Bromides, Iodides, and Salicyclates should always be prescribed with ELIXIR LACTOPEPTINE as a vehicle.

Send for Samples.

The New York Pharmacal Assoc.
Yonkers, N.Y.

OLDEST STAND ON BROADWAY.

TRINITY CHURCH 1697
MILHAU'S PHARMACY
BALTIMORE 1813.
NEW YORK 1830.
AT 183 BROADWAY.
CORTLANDT ST.
DEY ST.
TRADE MARK.
ST. PAUL'S CHAPEL. 1764

THE "ANIMAL EXTRACT CO.'S"

CARDINE, heart extract, for Heart troubles

CEREBRINE, brain extract for Epilepsy, Brain, Nerves, Hysteria, etc.

MEDULLINE, extract of Spinal Cord, for Locomotor-Ataxia, etc.

MUSCULINE, for Muscular Rheumatism,

OVARINE, for Diseases of Women, Sterility, Nervous Prostration, etc.

TESTINE, for Nervous Debility, Impairment, Impotency Exhaustion, etc.

THYROIDINE, for Obesity, Goitre, Skin Diseases, Myxoedema, etc.

☞ *Positively guaranteed as the only brand always strictly according to Dr. Hammond's published formulas. $100 forfeit if not.*

Dr. DECLAT'S PHENIC PREPARATIONS, for Cancer, Consumption and all Fevers.

Medals awarded, Paris, Lyons, &c. for Phenic Acid and Compounds.

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER
183 Broadway, - - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, June, 1896. No. 6.

LIBRARY
NEW YORK
BOTANICAL
GARDEN

JOINT PHARMACOLOGICAL INVESTIGATIONS BY THE AMERICAN MEDICAL ASSOCIATION AND THE AMERICAN PHARMACEUTICAL ASSOCIATION.*

By H. H. Rusby, M. D.

When one examines the pharmacological portions of the many ponderous volumes composing the index to the surgeon-general's library, and those of the *index medicus*, by which the former has been succeeded, remembering that a very large part of pharmaceutical literature is not here represented, the conviction is forced upon him that our knowledge of the practical utility of medicinal plants is small beyond all reasonable comparison with the amount of time that has been bestowed upon their study. This fact is not difficult to explain, at least in part. It is largely due to the method, or rather want of method, which has prevailed, by which partial investigations had been made by individuals without regard to their relation to the complimentary parts; these being left undone, the part performed remaining unutilized and becoming finally buried and forgotten. This neglect has been made farther operative by the habit of investigators of failing to search the work of previous investigators in the same lines before performing their own portion, so that the same work has been duplicated over and over again, and in such a way as not only to fail of confirming or refuting or of supplementing conclusions already reached, but in very many instances of unnecessarily and mischievously coming into conflict with them. This charge against investigators is fully and eloquently sustained by the small subscription list of the *index medicus* for many years past—throughout its entire history in fact. No class is more culpable for this neglect than medical editors, whose duty of criticising and weeding out contributions on these lines has been almost utterly neglected. This again is in a large degree due to the great number of medical journals, run almost confessedly for the most part as advertising sheets, and recognizing quantity with little regard to quality in the contributed matter.

---

*Read before the joint section on materia medica and therapeutics at the Atlanta meeting of the American Medical Association.

An almost equally responsible factor is the narrow view which physicians, and especially medical teachers, have been taking of their responsibilities in the department of pharmacology. In leaving to the pharmacist the practical details connected with botany and pharmaceutical chemistry, they have gone to the extreme of ignoring these subjects almost altogether in principle as well as in fact, and have as an inevitable consequence become incapable of utilizing the rich materials which have been placed within their reach by pharmaceutical investigators. There is no question that in the investigation of pharmacology, pharmacy has during the last decade very far outstripped medicine. "Why does not the medical profession catch up," would have been a very pertinent, even if not wholly respectful title for this communication.

The joint section of materia medica and therapeutics of these two associations—which section by the way should change its name to "The Joint Section of Pharmacology," is altogether the most competent and appropriate agency for correcting the defects to which reference has been made, and it is this which constituted the chief hope in its establishment by its leading promotors. To the great majority of observers in both professions it has never appealed from this standpoint. They appear to have seen in it merely an influence for the promotion of cordiality between physicians and pharmacists, either from sentimental considerations merely, or to accomplish the negative result of checking the friction which was apparent in certain quarters.

In this direction it has justified our expectations, and we are satisfied it has proven a success. But it must begin to do something more positive if it would not before very long begin to act as a dead weight. This is to promote a new method of undertaking and carrying out pharmacological investigations.

When the writer expected to act as chairman of the delegation from the American Pharmaceutical Association to this meeting, he planned to propose certain changes, having this object in view, in the manner of carrying on our joint work. Although absence prevents his official action in this direction, it appears desirable that his ideas should be informally presented.

The chairman of this section and that of the delegation have followed the ordinary custom in such bodies of contenting themselves with attending to the routine business of their offices and issuing general invitations to the members to present contributions. The result has been that the proceedings have been somewhat heterogeneous in character. While it is, of course, desirable that members should be left free to select any subjects which they prefer, and while nothing could, or should be done by a chairman, to deter any one from so contributing, yet, it would seem very desirable that at a meeting so peculiarly adapted as this is to the performance of joint work, some such work should be specially arranged for in advance by concerted action by the two chairmen. The chairman of the section is elected at the preceeding meetlng, but the chairman of the delegation is appointed by the President of the American Pharmaceutical Association, and it has not been customary for this appointment to be made until quite late in the year. Selection of the delegates has thus to be made by correspondence, extended often over a long period, and by the time arrangements are perfected, there is no time left for special investigation work to be done by the members of the delegation, of such a character that it would fit with related work done by the members of the section.

The writer would therefore suggest that the President-elect of the American Pharmaceutical Association should appoint the chairman of the delegation during the session of the American Pharmaceutical Association at which he is elected, and that that chairman should proceed immediately to act with the President in making up a list of delegates. The chairman should then at once confer with the chairman of this section in regard to undertaking one or more definite pharmacological investigations, to occupy one or more members of each of the contributing bodies. The members to do the work should be selected, and after acceptance should place themselves in correspondence with one another for carrying out the work in a manner calculated to reach some definite and completed result.

An instance of failure in such an attempt in the case of the present meeting will illustrate the principle involved. It was the desire of the writer to have the subject of the Viburnum barks investigated. A thorough chemical study of V. prunifolium was first to be made and the constituents isolated in sufficient quantity to admit of physiological experiment by some member of this section. The active constituent or constituents being thus determined, the related species were to be examined with reference to the possession of such constituents, as well as of others, so that a just conclusion could be reached as to their claims for recognition by the pharmacopœia, and, if recognized, then as to their recognition separately or under one definition. When the attempt was made to put this plan into execution, it was found impossible to complete the work in time for the meeting; though this would have been possible had it been started at the beginning of the preceding year. There is no reason why such a plan of work by the proposed method should not run through two or more years, if its completion in one year were found impracticable.

The writer believes that important practical results would follow the adoption of this plan or some modification thereof.

WHY LATIN IS USED. — The New York *Herald* publishes the following reply to the query why doctors use latin in writing their prescriptions, instead of English:—

In the first place, Latin is a more exact and concise language than English, and being a dead language, does not change, as all living languages do.

Then, again, since a very large number of all drugs in use are botanical, they have in the pharmacopæia the same names that they have in botany—the scientific names. Two-thirds of such drugs have not any English names, and so could not be written in English.

But suppose a doctor did write a prescription in English for an uneducated patient. The patient reads it, thinks he remembers it, and so tries to get it filled from memory the second time. Suppose, for instance, it called for iodide of potassium and he gets it confused with cyanide of potassium. He could safely take a number of grains of the first, but one grain of the second would kill him.

That is an extreme case, but it will serve for an illustration. Do not you see how the Latin is a protection and a safeguard to the patient? Prescriptions in Latin he cannot read, and consequently does not try to remember. Latin is a language that is used by scientific men all the world over, and no other language is. You can get a Latin prescription filled in any country on the face of the earth where there is a drug store.

We had a prescription here the other day which we had put up originally, and which had been stamped by druggists in London, Paris, Berlin, Constantinople, Cairo and Calcutta. What good would a prescription written in English be in St. Petersburg?

TO MIX Balsam Peru with oils, first mix with a little Castor Oil, after which any other fixed oil easily combines.

JUSTIFIABLE USE OF PRESERVATIVES.

By Joseph F. Geisler, Ph.C., F. C. S.

The perishable nature of many articles of food has tested the ingenuity of man to devise means to keep, for a considerable length of time, such food in a sound and wholesome condition. Many methods have been used with more or less success. Some are permissable, others prohibited on sanitary grounds. The most primitive methods are those of drying and refrigeration, which haye been in use from time immemorial. The former was applied in the simple drying of meats by exposure to the sun, and which is still in vogue, and in a modified form now applied to dried meats and dried or dessicated fruits. The utilization of ice and low temperatures dates back to an equally remote period, and have led to the elaborate methods of refrigeration as now practiced. Other methods in use are those of smoking, applied principally to meats and fish, by which the empyreumatic oil and other products of combustion act as antiseptics. Then follow those depending on the addition of preservatives or antiseptics, such as salt, sugar, vinegar, alcohol, and the long list of chemical compounds, such as boracic acid, salicylic acid, benzoic acid, saccharin, hydronaphthol, etc. The most ingenious method is no doubt that in which, after the expulsion of the air by boiling and other means, the food is hermetically sealed in tin (canned goods) or glass receptacles.

CHEMICAL PREPARATIONS.

The discovery of salicylic acid and other antiseptics led to their use in food products, since which time much has been written pro and con concerning their use as preservatives. A few years ago a sanitary commission in Paris, consisting of eminent scientists, made a thorough investigation regarding the use of salicylic acid, and, more recently, also benzoic acid and other drugs, as a result of which the use of these and other antiseptics in food has been generally condemned and prohibited. It is but natural that when bodies high in authority saw fit to legislate against the use of preservatives in food products, others should follow the precedent and adopt similar prohibitory measures.

It is argued that digestion is practically a fermentation, and since this is the case, a substance which will prevent fermentation will also prevent or disturb digestion. And, further, in the case of organic antiseptics, such as salicylic acid, the loss by decomposition of the acid on long keeping of the preserved article makes it difficult, if not impossible, to estimate the quantity originally used, whence it might follow that the quantity of salicylic acid originally added may have been decidely objectionable, but after long keeping reduced to a permissable quantity through natural decomposition, and thus bring it within the limit set by sanitary authorities. Thus there would not be sufficient safeguard against the excessive use of salicylic acid.

HYGIENIC PRINCIPLE QUESTIONED.

The hygienic principle underlying these objections is of questionable stability, although if it is proper to err at all, it is best to err on the side of safety. This is quite in keeping with sanitary acts, and yet there is a more rational way of looking at the matter. It must be obvious to any one that the true merit and wholesomeness of food products depend first whether they are in a condition to be eaten. The appearance, smell, taste or peculiar flavor make an article of food palatable, and as it deteriorates from these standards it depreciates in pecuniary and dietetic value. In fact, the flavor and smell are in many cases the indications of the wholesomeness of a food.

According to the character of the

flavor, people show preference for a food, and according to their like or dislike for that particular flavor, a food might become wholesome or unwholesome for that particular individual. No doubt the system can adapt itself, under peculiar contions, to food which under other conditions would make the same unwholesome and followed by serious consequences. This is not an argument in favor of bad food, but intended merely to call attention to the peculiarity of the different kinds of foods upon different individuals under varying circumstances. Verily, it may be said: "What is one man's food is another man's poison." In some cases, the ill-effects are due to the flavor, in others to indigestibility, and in some, especially meats, less to any unwholesomeness of the meat that to the effect of the imagination, resulting from some dislike of that particular article.

WHAT ADDITIONS ARE PERMISSIBLE.

It is desirable to exclude from food everything that is unnatural thereto, and yet this has its limits. Some foods during the course of their preparation must receive the addition of condiments, such as salt or spices, to make them palatable. Admitting the food to be wholesome, the question arises: What additions thereto are permissible from a sanitary stand point?

The preservatives which are used to keep food fresh act by preventing fermentation. The question therefore arises: What is the physiological effect *per se*, under these conditions of the preservatives used. The age, idiosyncrasy, and the peculiar condition of the individual, whether in good health or debilitated, may give rise to varying conclusions. It is well known in the practice of medicine that some of the most intense poisons are, when judiciously used in small quantities, of the greatest benefit to the system, either as stimulants or nerve tonics. Such are used, of course, under peculiar conditions, nor could their use be long continued without deleterious effects. But it shows, nevertheless, that because a substance is poisonous in one condition it is not necessarily so in another. Further, many of the irritant poisons show their poisonous properties only when they come in contact with the system in concentrated forms.

WHEN PRESERVATIVES WILL BE TOLERATED.

Many substances having pronounced poisonous properties are taken into the system daily without any apparent ill-effects; in fact, in many cases with pronounced beneficial results. This is notably the case with the condiments. A mustard plaster would not be a very palatable diet for any gastronome, and yet the active principle of such a plaster is daily used in the prepared mustard of the household. Red pepper, the volatile oil of cloves, cinnamon, nutmegs, lemon, or the delicate ethers which impart the agreeable flavors to the fruit, are, when taken into the system by themselves in considerable quantities, highly poisonous. Yet they are in daily use, and delight humanity with the agreeable taste and flavor they impart to food, rendering the food in many cases more wholesome and digestible than otherwise. Why is this? It is due to the degree of attenuation, the difference in quantity and concentration, and the different form in which these substances are brought into contact with the vital parts of the system. The quantities used are too insignificant to do harm. In this attenuated form they are no longer the powerful irritants, or whatever their peculiar effect may be, but stimulants.

The small quantity of preservatives, limited to quantities actually required to preserve a properly prepared food product, are in that condition of little or no consequence, as far as any deleterious effects upon the healthy human organism are concerned. Boards of health are given almost unlimited power in the matter of determining what is permissible as an addition to food products from a sanitary standpoint, and it must be admitted that such power is essential to such a body to protect the public against unscrupulous manufacturers. It is safe to predict, however, that it will not be many years before preservatives will be tolerated to a limited extent under certain conditions in articles of food of special manufacture, although public safety demands a prohibition of the indiscrimate use of preservatives in food.—*V. & C. Gazette.*

THE VALUE OF A MICROSCOPE.

BY L. A. WILSON, CLEVELAND, O.

There is a popular fallacy that the value of a microscope depends on the amount of its magnification. The novice at the microscope is often compelled to gradually recover from this diseased notion. After being entertained by a beautiful microscopic exhibit, a neophyte will proceed to a dealer and purchase the best microscope and the highest lenses that money will procure. Those that do so soon consign the instrument to the garret and abandon the pursuit in disgust. We must creep before we can walk. We must begin at the lowest rung of the ladder and ascend. Besides, the greater number of the most beautiful and instructive objects are to be seen with objectives no higher than an inch and a quarter inch objective.

Never use a higher power than will clearly show the specimen under examination.

For seeing nine-tenths of the objects for which the microscope is used by an amateur, high powers are absolutely useless.—*The Microscope.*

THE HISTORY OF PHARMACY.

BY DR. NINIAN FALKINER.

(*Continued.*)

When a Chinese physician is unable to procure the medicine that he requires he writes the names of the drugs he desires to employ on a piece of paper, and makes the patient swallow it—Grecian medicine anti-Hippocrates. Turning now towards the history of the great empires that replaced the power of Egypt and Persia in the south of Europe, Greece and Rome, we find in Grecian mythology that a prominent place is given to the deity that presides over the branches of the healing art. Appolo was the father of Æsculapius the god, and instructed by the kind centaur Cheiron, and brought up with Jason and many other demi-gods. Melampus is believed by the Greeks to have been the first mortal who practiced medicine; he was the first physician who prescribed iron in the form of rust and wine identical with the vinum ferri of the Dublin Pharmacopœia; he also practiced with hellebore, whence its name melampodium. In Homer there are numerous instances of medicine, surgery, and pharmacy, perhaps the most interesting is the account of disinfection by sulphur.—'Odyssy,' Book xxii., 481:—

"Bring sulphur straight, and fire, the monarch cries;
She hears, and at the word obedient flies,
With fire and sulphur, cures of noxious fumes,
He purged the walls and blood-polluted rooms."

Hippocrates (B. C. 460), the father of medicine, was the first teacher who endeavored to eliminate the superstitious element from its practice; he first recognized nature in the treatment of disease, and that physicians and pharmacists are her servants. He prescribed vegetable mercury, elaterium, scammony, poppy juice; he used blue stone, white vitrol in in the treatment of ulcers, and tar water in the treatment of wounds. With regret

I must for want of time pass on from Hippocrates to the dawn of modern medicine in the sixteenth century.

The Royal College of Physicians was founded in 1518. The history of medicine, as recognized by law, dates from the year 1511, when an Act was passed for appointing physicians and surgeons. The examination of these gentlemen was placed in the hands of the Bishop of London and the Dean of St. Paul's Cathedral. By this Act the faculty of medicine was vested in one body, the members of which practiced medicine, surgery, and pharmacy; the assistants to the physicians were called apothecaries. This happy and peaceful family party was broken up by the establishment of a Royal College of Physicians by Thomas Linacre, physician to Henry VIII., in the year 1518 A. D. This Act, we must observe, gave the College of Physicians full and penal powers against the apothecaries. In the same year the College of Surgeons was united to the College of Barbers, the surgeons abandoning the dignified and lucrative operation of shaving, while the barbers promised to confine their practice of surgery to the drawing of teeth. The surgeons appear to have behaved so badly that another Act was passed in 1542, which was directed at the quack system of practice without remuneration. In 1552 an Act was passed which declared that it was illegal for a surgeon to administer medicine. In the year 1553 the College of Physicians obtained a new Act, in which their former powers were confirmed and enlarged, and in which it is stated that their four censors, or any three of them, shall have power to examine, survey, govern, correct, and punish all and singular physicians and practitioners in the faculty of physic, apothecaries, druggists, distillers, and sellers of waters and oils and preparers of chemical medicines, according as the nature of his or their offences may seem to require. It is uncertain at what time the physicians gave up the practice of preparing their own medicines. The apothecaries, who had been incorporated with the grocers, obtained their charter in 1617; it was enacted at the same time that no grocer should keep an apothecaries' shop, and that no surgeon should sell medicines. The first pharmacopœia was published in 1618 by the College of Physicians of London. Twelve subsequent editions were published, the last in 1836. This Society prospered, and in 1671 built a laboratory. Mr. Bell gives an instance of the enormous charges of these people :—

Apothecaries' bill for attending Mr. Daly, of Ludgate Hill, five days. Total: £17 2*s.* 10*d.* The following are some of the items :—

	s.	*d.*		*s.*	*d.*
An emulsion	4	6	Another bolus	2	6
A mucilage	3	6	Another draught	2	4
Gilly of hartshorn	4	6	A glass of cordial	3	6
Blister	1	0	Blistering to arms	5	0
An emollient glyster	2	6	The same to wrist	5	0
An ivory pipe, armed	1	0	Two boluses again	5	0
A cordial bolus	2	6	Two draughts again	4	8
The same again	2	6	Another emulsion	4	6
A cordial draught	2	4	Another pearl julep	4	6
The same again	2	4			

This was the amount of medicine taken in one day by the unhappy victim. Misconduct of this kind on the part of the apothecaries gave their natural opponents, the physicians, a powerful weapon of offence against them, but their great public usefulness as a class prevented the annihilation of the Society then as in the present time. In 1748 the apothecaries appear to have obtained the same jurisdiction over the chemists that the physicians previously had over them, and led to the friction which has happily terminated in the foundation of the Pharmaceutical Society of Great Britain in 1841 and the foundation in 1875 of the sister Society in Ireland, whose guests we have the honor of being to-night. For those among you who wish to become more intimately acquainted with the history of medicine and pharmacy, I must refer you to the excellent work of Edward Berdoe, 'The Origin and Growth of the Healing Art,' and the 'Progress of Pharmacy in Great Britain,' by Jacob Bell and Theophilus Redwood.

I now come to the second section of my lecture, which is the Pharmacopœia. The earliest pharmacopœia was prepared by the Arabs in the ninth century. The first recognized by authority was published at Nuremberg in the year 1542. In England the first pharmacopœia under authority appeared in 1618, of which there were twelve subsequent editions, the last in 1841. The Dublin Pharmacopœia first appeared in 1807, the last edition being published in 1850. Until the Medical Act passed in 1868, the right of publishing the Pharmacopœia for England, Scotland, and Ireland was vested in the College of Physicians of London, Edinburgh, and Ireland respectively, and as these books contained several preparations similar in name and different in strength, such obvious danger arose for travellers that the British Pharmacopœia published in 1864, became, by Act of Parliament, the standard for Great Britain and Ireland. An amended edition was brought out in 1867. A second reprint with additions appeared in 1874, another edition was published in 1885, and a supplement to it in 1890.

With all its faults it is our pharmacopœia, and being ours we will all take our own method of abusing it. I, for my own part, am going to speak of it in simple language, saying how I think it might be improved, and my first cry is for Utopia. Why should not the Pharmacopœia be an international volume, edited by an international pharmaceutical conference, and revised every ten years as is the case with the American Pharmacopœia, and printed in all languages? That solution, the best for mankind, will come, but I fear that at a time when the bones of the most junior apprentice are resting with his fathers. But if you will allow me I will descend from my Utopian flight and soberly assert that the Pharmacopœia may be viewed from three professional standpoints :—(1st) Student and teacher, (2d) Pharmaceutical chemist, and (3) Medical practitioner.

From the educational standpoint the Pharmacopœia may be truly looked upon as a jewel casket that requires at least three keys to unlock it, one of gold, a knowledge of chemistry; the second of silver, a knowledge of botany and zoology; and the third of iron, the knowledge of experimental physics. No student can hope to understand this complex work unless he holds the three keys. With reference to education and the programme which I drew up for the course of materia medica and botany that was instituted last year, it might be said that my course was too comprehensive, but my answer to this will be given in the analogy of the three keys. For educational purposes I would therefore recommend (1) that all the chemical formula for reactions should be given; (2) that the natural orders of vegetable and animal products should be given; (3) that there should be a comprehensive glossary of the terms used in the Pharmacopœia with definftions; (4) that explanations of complex tests and processes should be given. As a pharmaceutical chemist, I should like to see all the processes definite, and when a difficulty in manipulation occurs it should be mentioned and the character of the product described. For instance, the lin. crotonis, lin. potass. iodidi and sapon, and lin. terebinthinæ. With reference to the second, I do not think the Committee could do better than to adopt the formula of the elegant preparation devised by my distinguished colleague, Prof. Charles Tichborne. Another preparation which is not always satisfactory when made by the official process is liq. gutta-percha. Indeed, I know that some practitioners are of the opinion that lead carbonate is contained in solution in this preparation. Those present who have prepared it know that the lead carbonate takes a long time to subside, and that even when the bulk is deposited the solution does not clear. I adopted the following plan, using dried, clean sand as a filter. I diluted with about half as much more chloroform, then dissolved and filtered, with the result—a bright solution which was easily concentrated.

Lastly, as a medical practitioner, I ask for standardized preparations whenever it is possible to obtain them. I look with distrust on most of the aqueous and green extracts; they must be of uncertain strength, and the prolonged processes by which they are obtained must seriously alter the nature of their constituents. I consider that Fowler's solution is at present an unsatisfactory preparation, as the leading authorities are not agreed as to its chemical condition, whether the arsenious oxide is dissolved in potassium carbonate, or a true arsenite of potassium is formed. I consider that the doses of Donovan's solution are too high. The dose of arsenious iodidi is given at $\frac{1}{30}$th part of a grain, and the solution containing $\frac{1}{100}$th part of a grain in each minim is given in doses of 10-30 minims. I have have too much respect for the idiosyncrasies of doctors, and perhaps also a kindly feeling to all the substances that are official as old friends to become a strong advocate for the removal of any of them. What harm do poor mastic and pyrethrum, and *hoc ille genus* do to anyone by being allowed to retain official distinction? I do, however, recommend that some preparations known to be used in enormous quantities be made official, such as chemical food, Easton's syrup, syrup of hypophosphites, syrup of lactophosphate of lime, and boroglyceride, and I think that fresh juices and abstracts are the types of medicines that when used will be likely to procure good results.

* * * *

APPARATUS FOR THE DETECTION OF BORIC ACID.

BY W. M. DOHERTY.

The milk, wine or other substance is made slightly alkaline with sodium carbonate, and after drying it is thoroughly charred, not burned to an ash. The charred mass is extracted with boiling water, and the solution obtained made acid, with hydrochloric acid, and evaporated gently over the water bath in a small porcelain boat, which is placed in an apparatus of the following description:

A piece of glass tubing, about 9 in. long and ½ in. in diameter, is turned over at right angles at one end and drawn to a fine aperture. A second piece of tubing about 2½ in. long and a ¼ in. in bore is provided with a hole in the side and placed over the aperture and arranged so as to form a glass Bunsen burner.

The porcelain boat or other vessel containing the properly prepared substance, supposed to contain the boric acid, is placed in the larger tube, which is attached at the wide end to the gas supply, the whole being supported by a clamp. The gas is regulated so as to produce a clear flame about ½ in. long, and free from luminosity at the extremity of the upright tube. The vicinity of the porcelain boat is heated by an ordinary Bunsen burner, and if boric acid be present, even in the most minute quantity, the small flame will show it distinctly. It will be found desirable to apply the heat gently, increasing it slowly, and carefully observing the flame in the meantime. — *Proc. Chem. Soc.*

BUNSEN ANTICIPATED?

There is in the possession of Thomas J. Macmahan an interesting relic of the famous chemist Priestley, the discoverer of oxygen. Should it be possible to establish as a fact what Mr. Macmahan has good reason to believe, then the credit for the invention of the Bunsen burner would be moved from Germany to England, or, at least, divided between the two.

It will be recalled that Joseph Priestley died in Pennsylvania in 1804, just thirty years after his famous discovery. With him had come from England two brothers Gale, one, Charles, known as the Squire, and the other, John, a mechanical genius. The distinguished chemist frequently called upon John Gale to assist him in making apparatus, and it was he who helped to put together the apparatus used in the first experiments with oxygen.

Priestley went the way of all flesh, as did also his friend John. The apparatus fell into the Squire's hands, and at the death of the latter it was sold, with the other household and farm effects, as old "lumber." Mr. Macmahan, Sr., the father of Thomas J., bid on the old box of odds and ends. As no one increased the bid, the auctioneer knocked it down to him.

The small boy Tom afterwards came along, and in order to get his voice in training for its future usefulness, constructed a horn from one of the tubes in the apparatus. Being out at the old homestead on a visit some time ago, and having acquired some knowledge of the value of the old relic, he hunted through the garret and found what was left of the horn. He brought it to the College of Pharmacy, where it is now in the keeping of Prof. Coblentz, who believes that it was the forerunner of the Bunsen burner.—*Druggists' Circular.*

CHARAS: THE RESIN OF INDIAN HEMP.

BY T. B. WOOD, M.A., W. T. N. SPIVEY, M.A., B. SC., and T. H. EASTERFIELD, M.A., PH.D.

The authors have examined "charas," the exuded resin of *Cannabis indica*, with a view to the isolation of the active principle. The method adopted consisted in the fractional distillation of the ethereal extract prepared from the crude substance. By this means four compounds were isolated: (1) A terpene, b. p. 170—180°. (2) A sesquiterpene, b. p. 258—259°, identical with that previously obtained by Valenta from Personne's "cannabene," the green oil obtained when the hemp plant is distilled with water. (3) A paraffin, probably $C_{29}H_{60}$, m. p. 63.5—64°. (4) A red oil, formula $C_{18}H_{24}O_2$, semi-solid below 60°, and boiling constantly at 265° at 20 mm. pressure; this compound is present to the extent of 33 per cent. in the sample of "charas" examined. In doses of 0.05 gram it produces intoxication, followed by sleep. The substance has also been isolated by the authors from a number of pharmaceutical preparations made from the plant. The resin as prepared by T. & H. Smith in 1847 contains no less than 80 per cent. of the oil. There can be no doubt that the characteristic action of Indian hemp is due to the presence of this compound, the constitution of which is under investigation.—*Proc. Chem. Soc.*

ONE of the latest developments in electrical therapeutics is an electric poultice pad made of asbestos and kept warm with an ordinary current. It is given the effect of moist heat by covering it with a wet flannel. The old style poultice was objectionable on account of the frequent changes of temperature incident to its renewal. This is entirely avoided in present device.

◆

A PIECE of gum camphor in the boxes or bags where silverware is kept will keep it from tarnishing.

SIYTY-SIXTH ANNUAL COMMENCEMENT OF THE COLLEGE OF PHARMACY,

OF THE CITY OF NEW YORK

CARNEGIE MUSIC HALL, 57th STREET, AND 7th AVE., THURSDAY EVENING, MAY 7th, 1896, AT EIGHT O'CLOCK.

PROGRAMME.

Overture, "The Regent," Mercadante.

Music, melodies from "The Chieftain," Sullivan.

Entrance of the Faculty of the College, the Post Graduate Class, and guests.

Music, "Seventh Regiment March," Graffula.

"Solo for Cornet," "Robin Adair," W. B. Rogers.

Entrance of the Graduating Class at half-past eight o'clock.

March, "Class '96," Rogers.

PRESIDENT SAMUEL W. FAIRCHILD:

Ladies and Gentlemen:—On behalf of the Board of Trustees I bid you welcome to the 66th Commencement Exercises of the College of Pharmacy of the City of New York, which will begin with prayer by the Rev. Dr. Junius B. Remensnyder.

Prayer by Rev. Dr. Junius B. Remensnyder:

O Thou Who art most high, holy and mighty Ruler of the Universe, we adore and bless Thy holy name. We magnify Thee as enthroned over the Kingdom of Nature, ordering its law and ongoings in accordance with wisdom, kindness and truth. We adore Thee, O God, as the author and the framer of the soul with all its high capacities. We thank Thee for the gift of life with its possibilities of progress, of achievement, of advancement, of usefulness. We bless Thee, O God, for this age in which we live, in which the light of the truth shines, an age of advancement unparalleled in the growth of arts and sciences and their application to the convenience, well-being and happiness of life. We thank Thee for the advancement that has been made in applying the gifts of healing to the disorders and sufferings of the children of men, and we bless Thee for Thy promise to be with us in all our times of need, that Thou mayst strengthen and uphohld us, and above all, O God, we bless Thee that as in this world we have to confront pain and death and trouble, that Thou hast brought life and immortality to light and hast revealed to us the possibility of the grand, blessed and glorious state of being in the world to come. And now we invoke Thy presence and blessing upon the exercises of this evening. O God wilt Thou look down upon this Institution, upon its faculty and officers, and upon this class which stands to-night upon the threshold of the mysterious and unknown existence in the theatre of the world. Wilt Thou bless each and every one of its members. Wilt Thou hold before them all a high and lofty ideal of life. May they have noble aims. May they seek after usefulness. May they while inquiring into the mysteries of Nature, be led through Nature up to Nature's God. And wilt Thou grant to bless and preserve Thy children everywhere. Go with us all through the journey of life. May we choose righteousness and virtue. May we avoid sin and fight down temptation. May we discharge well our part in this life and when thou art done with us here wilt Thou receive us into Thine everlasting kingdom, and unto the Father, Son and Holy Ghost be glory. As it was in the beginning, is now, and ever shall be, world without end. Amen.

Music, "The Lost Chord," Sullivan.

Reading the Roll of Graduates and certifying same by the Secretary,

Alfred H. Mason, PH.C., F. C. S.

Conferring Degree Ph.G.

By the President, Samuel W. Fairchild, PH. G.;

Ladies and Gentlemen:—The Secretary has certified to me that these gentlemen are entitled to receive their degree.

Gentlemen, by the authority conferred upon me as Chairman of the Board of Trustees of the College of Pharmacy of the City of New York, I declare that you are Graduates in Pharmacy.

Gentlemen: Graduates in Pharmacy: In behalf of the Board of Trustees I beg to present to you their very hearty congratulations. They are very proud of you to-day, and I trust that in your future career you will give them every cause to continue to be proud of you.

Wishing to emphasize the fact that there are two young ladies here to-night who have fulfilled all of the conditions necessary to receive their degree, I shall take much pleasure in conferring the same.

Miss Lawall and Miss O'Connor: By the authority of the State of New York conferred upon me as Chairman of the Board of Trustees I now declare that you are Graduates in Pharmacy. (Tremendous applause).

PRESIDENT FAIRCHILD:

Ladies and Gentlemen:—I have much pleasure in announcing that Mr. John W. Keller will make the address this evening both to our graduates and to you.

Music, "Bicycle March," Rogers.

Address to Graduates

By Mr. John W. Keller:

Members of the Graduating Class: Ladies and Gentlemen: When the College of Pharmacy of the City of New York did me the honor to invite me to make this address I replied, "But I don't know anything about pharmacy." Whereupon, much to my astonishment, Mr. Macmahan of the Trustees, who brought me the invitation, said with great enthusiasm, "You are just the man we want. The one thing we don't want to hear about is Pharmacy." That leaves the field wide open. But you may be assured that what I said to Mr. Macmahan is true. I do not know anything about pharmacy. It is not customary that a newspaper man (for that is my business) should acknowledge that he doesn't know anything about everything. On the contrary, it is the custom of modern journalism to pretend, at least, to know everything. But if I had made such a pretense you would readily have found to-night that it was all a pretense, and therefore, that there may be no mistake, I tell you now that my knowledge of pharmacy is confined to a distasteful familiarity with an occassional pill, a condition that is forced upon me by an affectionate but over zealous spouse. The other day I thought I would escape the pill and went out without anybody seeing me. As I walked down Fifth Avenue I met my wife who took a pill out of her pocket and said "take it." So you cannot possibly escape it. There are men in my business, however, who know more about pharmacy than I do. They have a knowledge of spiritus frumenti at night and bromo seltzer in the morning. (Applause). That is simply astounding and the funniest part of it all is that they write their own prescriptions and get them filled while they fill themselves. I suppose, however, that this is more a matter of the Raines Bill than it pertains to the College of Pharmacy of the City of New York. I merely mention it as an instance. I do hope, however, that when these young gentlemen become launched well upon life that they will demand a regular doctor's prescription for spiritus frumenti.

But for all that, the pill stands pre-eminent as the emblem of pharmacy in the minds of the uninformed public. I do not know what these graduates or these gentlemen of the Faculty selected as their emblem, but in the mind of the general public the pill is the thing. You cannot get away from it. It is the conjunct sign of relief for suffering humanity and yet so ungrateful is humanity that the pill is always referred to with opprobrium and always meets with animosity. It has gone down through the centuries contending against a predjudiced public palate.

You may coat, you may sugar the dose if you will,
The taste of the pill will hang round it still.

Probably the worst thing, however, that was ever said against the pill was related to me the other day by an English doctor. He said he went to see one of his patients, and finding her lavishing upon a lap dog some of the sentiment that she might have given to her children, he said: "Madam, what is the name of your dog?" The reply was, "Pill." Said he, in astonishment, "what an odd name for a dog, why call him Pill?" "Oh Doctor," she said, "you should not ask why. I call him Pill because then I know that nobody will want to take him.

The first performance of the play Romeo and Juliet that I ever saw is still stamped upon my memory because I felt that the Apothecary had been libelled in that production. You will remember the scene. Romeo is in the streets of Mantua and has just received the news of the supposed death of Juliet. He is looking about for some means to end his own miserable existence when this thought occurs to him. I am not going to read this to you as Romeo would read it, for my Romeo days are done. I am simply going to read it to illustrate to you, if possible, that either Shakespeare libelled the profession of pharmacy or else that in the 300 years that have expired since this was written, pharmacy has made gigantic strides.

"I do remember an Apothecary,
And hereabouts he dwells, which late I noted
In tatter'd weeds, with overwhelming brows,
Culling of simples; meagre were his looks,
Sharp misery had worn him to the bones;
And in his needy shop a tortoise hung,
An alligator stuff'd, and other skins
Of ill-shaped fishes; and about his shelves
A beggarly account of empty boxes,
Green earthen pots, bladders and musty seeds,
Remnants of pack-thread, and old cakes of roses,
Were thinly scatter'd to make up a show,
Noting this penury, to myself I said—
And if a man did need a poison now,
Whose seal is present death in Mantua,
Here lives a caitiff wretch would sell it him."

After rousing the worthy Apothecary, who you will remember is represented in the play in a manner that illustrates the meaning of the lines, and having bargained with him for the poison that he is after, and the Apothecary having refused it through fear of the law, Romeo again addresses him :

"Art thou so bare, and full of wretchedness,
And fear'st to die? Famine is in thy cheeks,
Need and oppression starveth in thy eyes,
Contempt and beggary hang on thy back,
The world is not thy friend, nor the world's law;
The world affords no law to make thee rich ;
Then be not poor, but break it and take this."

Can you imagine a condition of pharmacy that would justify any such description as this given by Shakespeare? Look at the Faculty of the College of Pharmacy of the City of New York. Can you find in any one of these gentlemen any evidence of this lank, lean, miserable caitiff wretch? Surely the future of the College of Pharmacy of the City of New York with the newly elected President, Mr. Kemp should keep it entirely free from any such reproach as this. But compare the present place in which the Apothecary does business with that of Shakespeare's time. Where is that tortoise hanging now? Where are those skins of other fishes, those empty boxes, the penury of it all? Why to-day the Apothecary's shop is the palace of trade. It is the most respectable place into which we can go, and it has other attractions so great and so numerous that they are almost impossible to resist. If you do not believe this, try some night to take a young lady out to walk and get her by a drug store, if you can, without buying something. But great as have been the strides in the last three centuries of the business of the Apothecary and the change that is in his shop, greater still, if we may believe that Shakespeare told the truth, is the change in the condition and the character of the man. Romeo's "caitiff wretch" has so developed that he has become one of the most potent factors in the advancement of the world. The Apothecary to-day stands in the first rank of business, of commerce, as he does in the first ranks of science. His enterprise has moved business into existence that means millions upon millions of money. The culling of simples has changed into the compounding of medicines, and in commerce, with all its dependent scources there is no greater factor to-day than the compounding of medicines. Not only this but the result of his study, the result of his endeavor, the result of his science has enabled the physician to make life more pleasurable because it has removed the probabilities of death; because it has removed in many instances the possibility of pain to the human race. There is no nobler calling than that of the man who elects to spend his life that his fellow men may be healed. The Apothecary to-day is the Good Samaritan of the universe. The variegated lights that shine from his shop windows are the beacons that light the sick and the afflicted to hope and to health. Members of the Graduating Class, I congratulate you upon the avocation you have chosen. There is no nobler, no better. Gentlemen of the Faculty, I congratulate you upon the showing that you make to-night in this Graduating Class.

For sixty-six years the College of Pharmacy has stood and it has progressed constantly, for to-night this class is the largest that has ever been graduated from this college (applause), and not the least, not the least feature that is pleasureable to me as a citizen of New York, is the fact that in this class to-night are two young women who have taken the full course and passed the final examinations and now hold in their hands the degrees to which they are entitled. (Applause.) It is one of the proudest things in the whole history of this college that for thirty years it has thrown open its doors and given to women the right to do such things as men do rightly (applause); that it has acknowledged the principle that whatever a man may do and do rightly, that too a woman may do. Of course, young ladies, when I make this statement I have a mental reservation that men do not wear bloomers. (Applause). I do not know under the regime of the New Woman what we may come to, but if my bloomers are cut I am not aware of it.

Members of the Graduating Class : I believe that it is customary on occasions like this to give sound advice; to point out the milestones of success along the pathway of life. I know no patent on success. I know only one way to achieve it. That one way is work, work, work, always work. I have never achieved anything that was not due to work. I have never made a failure that work would not have averted that failure. To me work is a religion. It is omnipotent. There is nothing that it cannot accomplish. In its power it is God-like. Sacrifice to it your time, your brains and your energy and it will crown you with laurels and soothe your years with the applause of public approval. Refuse it and its punishment is oblivion and the contempt of your fellow-men. I know nothing that is new. I know only those things that the world holds good; that have lasted through all the centuries. I have learned only this, that as the old songs are the best songs because they never fail to touch a responsive chord in the human heart, so the old truths are the best truths because they have stood the test of time and have removed all possibility of doubt.

Be single in your purpose. You can never achieve anything unless you set your mark and never let anything move you from it. You have chosen to-night to be apothecaries, to be pharmacists. Let not any temptation divert you from that purpose. You must go straight to your point and refuse all temptation otherwise.

Remember to value time. It is more precious than gold. As you sit here to-night I doubt not that the years look long to you. They always look long in the springtime of life, but when the autumn comes they grow so short, so short, that there seems no time to do anything. There is no spectacle so pitiful in all the world as the man who suddenly rises in the afternoon of life to a conviction of the fact that the promise of his youth is gone; that his opportunity is lost. All that he can do is to stagger to his feet and cry aloud, "Too late! too late! O Work, thou God of Success! Thy punishments are as severe as thy rewards are grateful."

There is no advice I can give you better than that which Polonius gave to Laertes;

"Neither a borrower nor a lender be,
For loan oft loses both itself and friend,
And borrowing dulls the age of husbandry,
This above all—to thine own self be true;
And it must follow, as the night the day,
Thou canst not then be false to any man,"

Read the Bible and study the Constitution of the United States. In the former you will find the moral precepts that have preserved the human race. In the latter you will learn the basic principles of human liberty—principles that have made your country the greatest Republic on the earth; principles that have made your flag, the blessed Stars and Stripes, the emblem of freedom (applause), the emblem of freedom the whole world over. There is not a day that I do not thank God that I was born an American citizen. (Applause.) That same good fortune is yours. It makes you the peers of any man, in any country. It gives you the heritage of the best blood of the earth, for the blood of the American people is the blood of all the liberty loving people of all the nations of the earth. (Applause.) People that to obtain freedom and the blessings of liberty chose to be American citizens. To obtain that blood the Goddess of Liberty skimmed the hearts of mankind.

Cherish your heritage. Cherish it, that in the exercise of your right of suffrage you may guard your country and your city, for it always needs the guardian of the people to save it from the politician. Guard it, that the government for which Washington fought and Lincoln died, the government of the people, for the people and by the people, may not perish from the earth.

Finally, remember one thing. No good deed ever failed to bring its own reward. No evil deed sooner or later ever failed to bring its own punishment. The man who squares his life by the Golden Rule needs fear neither the criticism of his time nor the judgement of his God; but the man who transgresses truth and justice and right, must suffer the consequence of his sins. A good man never dies, and a good woman—a good woman is already an angel. (Applause.) The sun of a good man's life may set, but the skies of memory will always remain aglow with the golden rays of his deeds. This is the goal of true ambition; to so live, that in the end the stars shall sing together, the world is better that this man has lived. To so live that posterity may point to your life and say: "To be great is to do good." To so live that your life shall illustrate and emphasize this great truth.

"Right is right, as God is God, and right the day must win.
To doubt would be disloyalty, to falter would be sin."

(Applause.)

Music, "A Hunt in the Black Forest," Voelker.

Doctor of Pharmacy.

Conferring Degree on students of the

Post-Graduate Class by the President, Samuel W. Fairchild, Ph.G.:

POST-GRADUATE CLASS.

Charles H. Bjorkevall, New York, N. Y.; Harry B. Ferguson, Little Falls, N. Y.; Rudolph Gies, New York, N. Y.; George H. Jorgensen, New York, N. Y.; Joseph F. McCarthy, Yonkers, N. Y.; Christopher Niederer, Jr., Carlstadt, N. Y.; Frank F. Ogden, Middletown, New York.

PRESIDENT FAIRCHILD:

Ladies and Gentlemen—In the year 1894 the legislature of this State passed an Act authorizing the College of Pharmacy, of the City of New York, to confer the degree of Doctor of Pharmacy upon its own graduates or the graduate of any other college in good standing, after they had taken a post-graduate course, and had passed the examination and had been certified by the Faculty and the Trustees as being properly qualified to receive that degree. There is no one fact that I could bring before you to-night to illustrate the progress which the College of Pharmacy of the City of New York, is making better than to point to this class of seven young gentlemen, who are fully qualified to receive the degree of doctor of pharmacy. (Applause.) It is one of the most pleasant duties which will fall to my lot this evening to confer this degree.

Gentlemen—By the authority of the State of New York, conferred upon me as Chairman of the Board of Trustees of the College of Pharmacy of the City of New York, I hereby declare that you are doctors of pharmacy, (applause), and I offer you the congratulations of the Board of Trustees, and of every member of the College of Pharmacy of the City of New York. I beg that in the future you will remember that by honoring yourselves, you will honor the institution that has given you professional birth. Gentlemen I congratulate you.

Music, "Indian War Dance," Bellstedt.

PRESIDENT FAIRCHILD:

Prof. Arthur H. Elliott will read

The Roll of Honor

on behalf of the Examination Committee. (Appluase.)

PROF. ELLIOTT:

Mr. President, Ladies and Gentlemen—It gives me great pleasure to read the roll of honor on behalf of the Lecture Committee. You must understand that the figures given represent points of work. In all the work of the students of this class, the greatest number of points that any one student can make is 600. The man that came nearest to that is Karl Schnackenberg with 551 points. Mr. Schnackenberg got 551 points, or putting it in percentage it is 91.83 per cent. The next man was not far behind him. Merton J. Coats got 550, or 91.66 per cent. The next man on the list is Karl M. Vogel, 548; that is 91.33 per cent. The next man is Adolph G. Massman, 545 points, or 90.83 per cent. The next man is Paul O. L. Thielke, 543 points, or 90.50 per cent. The next man is David Westheimer, 542 points, or 90.33⅓ per cent. The next man is Erastus W. Bulkley, 533 out of a possible 600, or 88 per cent. The next man is Alois Hostomsky. He pairs with the man preceeding him, 533, or 88 per cent, Louis Protzmann, 532, or 88.66 per cent.; Henry Brown, 523, or 87.16 per cent.; Guy H. McCoy, 519, or 86.50 per cent.: John H. Eberhardt, Jr., 517, or 86.16 per cent.; Thomas Le Clear, 516, or 86 per cent.

Gentlemen, It is with great pleasure that I have to congratulate you upon getting on the Roll of Honor. I had the good fortune on Saturday to hear President Elliott, of Harvard College, address that large concourse of people on Morningside Heights at the dedication of Columbia, and one of the remarks that he made impressed me very much. In speaking of Columbia and her work, and the institutions of learning in general around New York, he said: "New York demands of her institutions of learning, experts." You have proven by your work and by your standing here to-night, that in this class of 1896, you are the experts. Now, let us hope that the honors you gain to-night you will constantly bear in mind, and you will constantly hold your colors high and stand up to them like men. Let us hope that this is but the beginning of many honors that will be conferred upon you, and that you will always remember your alma mater and keep her name unsullied. (Applause.)

Music, "Narcissus," Nevin.

Awarding Special College Prizes.

PRESIDENT FAIRCHILD:

There are three prizes offered every year by the College of Pharmacy to those three students who excel in practical pharmacy, practical chemistry, and in materia medica and pharmacognosy. Up to the present moment I feel sure that there are not a half a dozen in this audience or upon the stage who are aware of the names of those three fortunate students.

Miss Julie M. Lawall, is entitled to the prize of $100 for having passed the best examination in practical pharmacy. Out of a possible 100, she received 98 per cent. (Applause.)

Mr. Thomas Le Clear is entitled to the prize of $100 for having passed the best examination in practical chemistry. Out of a possible 100, Mr. Le Clear received 100 per cent. (Applause.)

Mr. Karl M. Vogel is entitled to the prize of $100 for having passed the best examination in materia medica and pharmacognosy. Mr. Vogel received 84 per cent.

Among the other pleasant duties which have fallen to my lot this evening as Chairman of the Board of Trustees, is the one which I have now before me. I had expected to have the pleasure also of presenting the prize of $100 and of congratulating Miss Lawall, but Prof. Coblentz will perform that function. (Applause.)

PROFESSOR COBLENTZ:

Mr. President, Ladies and Gentlemen—Through the courtesy of President Fairchild, I have the pleasure of awarding this prize in practical pharmacy to Miss Lawall. This prize as you have heard is $100, to the one passing the best examination in practical work. This examination was strictly practical in every sense of the word. You might say in this connection that any amount of book learning or hard study would not be of the slightest avail in work of this kind. It requires years of long, diligent, patient practice to make an excellent dispenser. It affords me a great deal of pleasure to offer this prize to Miss Lawall this evening, because it is the first time in the history of this college that the prize goes to a lady. It has often been said that the ladies are not practical, that they are very good for theoretical work and learning from books and learning how to forget; but to entrust them with practical work that requires judgment, they all say we do not want them; but I think we have here an exemplification of the contrary to this rule. I feel assured in awarding this prize to Miss Lawall that this $100 is not going to be spent for any spring hats or fine dresses, nor do I believe it is going to be put or invested in a bicycle. I can assure the audience here that Miss Lawall's enthusiasm for her profession is such that she will invest it where it will do her the most good and science in general.

PRESIDENT FAIRCHILD:

Mr. Thomas LeClear: In presenting you this prize, sir, I present also to you the congratulations and best wishes of the Board of Trustees of the College of Pharmacy of the City of New York, and they wish you every success in your future career.

Mr. Carl M. Vogel: In presenting to you this prize on behalf of the Board of Trustees of the College of Pharmacy of the City of New York, I beg also to offer to you their congratulations and their very best wishes for your success.

Before proceeding further with our programme there has been a request that Mr. Rogers and his band will play for you "Ben Bolt."

Cornet Solo, "Ben Bolt," by Mr. W. B. Rogers.

Faculty Prize.

PRESIDENT FAIRCHILD:

The Chairman of the Board of Trustees was very agreeably surprised to-day, as he is sure the recipient will be, to learn that the Faculty have inaugurated a yearly prize to the post graduate student who does the most meritorious work during the session and does original research. The prize you will see before you on the table is a balance, something which is especially valued by the chemist, and I have much pleasure in announcing that the Faculty have agreed that Dr. Harry B. Ferguson is entitled to the prize which is upon this table. Dr. Ferguson, in behalf of the Faculty I have much pleasure in informing you of this, which I am sure is a complete surprise to you. It is a pleasure to me, it is a pleasure to the Board of Trustees and it is a pleasure to the Faculty to award you this prize. I offer you their congratulations.

Music, "Favorite Songs," Beyer.

Alumni Prizes.

PRESIDENT FAIRCHILD;

There are three prizes offered annually by the Alumni Association of this college—a gold, a silver and a bronze medal—to the three First Honor Men. Mr. Alfred Stover, Ph. G., President of the Alumni Association, will now present these medals.

PRESIDENT STOVER:

Mr. President, Ladies and Gentlemen, members of the Class of 1896: It now becomes my pleasant duty to award to the three gentlemen of the graduating class who have attained the highest percentage in their final examination the three medals just referred to by Mr. Fairchild, the President of the college. In doing so I want to extend to the members of the graduating class the hearty congratulations of the Alumni Association. There is not one member among us who cannot fully appreciate the crucial test through which you have just passed. We know full well the thoroughness of the professors' instructions and we know also well —most of us too well—the rigor of the Examining Committee. We know what you have gone through, and we can therefore extend our congratulations probably more earnestly than a great many others who will extend them to you to-night. You have now, after having passed through the requisite examination, had conferred upon you the degree of Graduates in Pharmacy. Wherever you go, the eyes of the college will follow you like the eyes of a mother. She will watch your every success, watch your every step. And also in behalf of the Alumni Association I want to extend the right hand of fellowship to the Class of 1896 and state that for the first time in the history of our Association the entire class has been enrolled on our register and elected to membership. The Association looks to you as younger brothers, younger brothers and sisters, and whatever you do our register will show. Whatever success you achieve will be carefully recorded. I know by looking over this class and seeing its remarkable standing that very few of your lectures have been bolted. While, gentlemen, your progress may in the future be somewhat of a Pil(l)-grim's Progress, yet if you carefully follow the instructions and the advice given you by Mr. Keller this evening, success will surely ultimately crown your efforts.

The gentleman winning the first prize is Mr. Karl Schnackenberg. The second prize is won by Mr. Merton J. Coats. The third prize by Mr. Karl M. Vogel.

Mr. Schnackenberg, in awarding you this gold medal I do so trusting that the metal itself may be an emblem typical of your life work—bright and always unsullied.

Mr. Coats, yours is a silver medal. May that also represent the proceeds of your business in good sterling silver.

Mr. Vogel, yours is one of bronze. I trust you will remember that while your hands may often be stained with bronze in your work, that all labor, all work, is honest and honorable, and that the man who achieves success by his own efforts stands high in the estimation of all right minded people.

PRESIDENT FAIRCHILD:

Ladies and Gentlemen: We have now, with the exception of the music and the distribution of the flowers which you see before you, and which is not the least enjoyable part of the performance to these gentlemen, reached the end of our programme. In behalf of the Board of Trustees I thank you for your attendance and for your careful attention, and I trust that we may have the pleasure of seeing you all again another year, and I now have the pleasure of introducing to you my friend and the President elect of the college, Mr. Edward Kemp.

Music, "Medley," De Witt.

Distribution of flowers.

Music by Seventh Regiment Band, W. B. Rogers, leader.

LIST OF GRADUATES.

Ackermann, Edward, Jersey City, N. J.
Adams, Albert R., Collinsville, Conn.
Austen, Frank M., New York, N. Y.
Austin, William G., Luzerne, Switz.
Barnes, Harry Elmer, Herkimer, N. Y.
Barnes, Howard R., Middletown, N. Y.
Bear, Pierce B., Davenport, Iowa.
Becker, Joseph Charles, New York, N. Y.
Bennett, Richard W., New York, N. Y.
Berger, Maurice M., New York, N. Y.
Block, John G., Jersey City, N. J.
Bormann, William F., New York, N. Y.
Branner, Wm. S., New York, N. Y.
Brooks, Joseph J., New York, N. Y.
Brown, Henry, Scranton, Pa.
Bruguier, Oscar R., Newark, N. J.
Buckmaster, Frederic C., Yonkers, N. Y.
Buell, Frank O., New York, N. Y.
Bulkley, Erastus W., Brooklyn, N. Y.
Butterworth, T. Edgar, North Adams, Mass.
Cosden, Alfred H., Hazlettville, Del.
Cannon, Harry D., Waterbury, Conn.
Cantwell, James Y., Davenport, Iowa.
Coats, Merton J., Edmeston, N. Y.
Cowan, John B., New York, N. Y.
Darnstaedt, Rudolph L., Newark, N. J.
Deutschberger, Alexander, New York, N. Y.
Dickson, James M., Bovnia Centre, N. Y.
Diehl, Theodore, Phillipsburg, N. J.
Donahoe, John P., Scranton, Pa.
Donnelly, H. Frank, Davenport, Iowa.
Donzel, Barthelemy G., Yonkers, N. Y.
Drenckhahn, Louis A., New York, N. Y.
Drollinger, Adolph F., Brooklyn, N. Y.
DuBois, Louis, Catskill, N. Y.
Eberhardt, Jr., John H., New York, N. Y.

Eckhard, Philipp L., Brooklyn, N. Y.
Egger, Frederick M., Elizabeth, N. J.
Finley, Frank H., Providence, R. I.
Flesch, Berthold, New York, N. Y.
Franck, Adam, New York, N. Y.
Frank, Christian F., New York, N. Y.
Franz, Adam J., New York, N. Y.
Fulton, Frank, Plainfield, N. J.
Garbarino, Louis, New York, N. Y.
Gerken, Charles G. H., Brooklyn, N. Y.
Gies, Louis G., New York, N. Y.
Gillette, Lester C., Towanda, Pa.
Glendening, Harold, Norwalk, Conn.
Gluck, Max, New York, N. Y.
Goldlust, Benjamin A., New York, N. Y.
Gould, Charles P., Seneca Falls, N. Y.
Graham, Robert W., Middletown, N. Y.
Gregorius, William P. L., New York, N. Y.
Hagen, Howard H., Middletown, N. Y.
Halpern, Louis N., New York, N. Y.
Hasler, Herman, Caldwell, N. J.
Hayward, Frank W., Hackettstown, N. J.
Herlihy, James A., Chillicothe, Ohio.
Hirschmann, Morris, New York, N. Y.
Hoefling, Adolph C., New York, N. Y.
Hostmann, Jeannot, Jersey City, N. J.
Hostomsky, Alois, New York, N. Y.
Hoyt, Frederick, Goshen, N. Y.
Hulick, Bloomfield, Asbury Park, N. J.
Hummel, George H., Long Island City, N. Y.
Irvine, William D., Waterloo, Iowa.
Isemann, William, Brooklyn, N. Y.
Ives, Orrin F., Bristol, Conn.
Jennings, Frank R., Far Rockaway, N. Y.
Johanson, Frank L., Oakland, Nebraska.
Klingman, Albert, New York, N. Y.
Kraft, Joseph M., Newburg, N. Y.
Landsman, Arthur A., New York, N. Y.
Lawall, Julie M., New York, N. Y.
LeClear, Thomas, Lyndhurst, N. J.
Lockwood, Milton I., Stapleton, N. Y.
Lotz, Louis A., New York, N. Y.
Lowe, Charles H., New York, N. Y.
McCoy, Guy H., Smithport, Pa.
McCullough, James M., White Plains, N. Y.
McCully, Rob Roy, New York, N. Y.
McGraw, William H., Cortland, N. Y.
McKenna, William H., Malone, N. Y.
McLaughlin, John J., Elizabeth, N. J.
Marscheider, Charles E., New York, N. Y.
Massman, Adolph G., Newark, N. J.
Meyer, Isaac, Jersey City, N. J.
Miller, John G., New York, N. Y.
Morlath, William, New York, N. Y.
Morris, Jonathan, Norwich, Conn.
O'Connor, Madge, New York, N. Y.
Norcross, Grandin, Far Rockaway, N. Y.
Novak, John, New York, N. Y.
Perilli, Francis S., New York, N. Y.
Pier, Victor S., Poughkeepsie, N. Y.
Pierce, Charles L., Port Jervis, N. Y.
Pierson, Joseph, New York, N. Y.
Potter, Werden B., Woank, Conn.
Protzmann, Louis, New York, N. Y.
Rakoff, Joseph, New York, N. Y.
Rawlins, Clifton M., New York, N. Y.
Reynolds, Charles F., Roxbury, N. Y.
Rezba, Emanuel C., New York, N. Y.
Ricksecker, Charles A., New York, N. Y.
Riegel, Adolph G., New York, N. Y.
Roediger, Joseph T., New York, N. Y.
Sackett, William L., Tarrytown, N. Y.
Salicrup, Robert J., Bath Beach, N. Y.
Scheidt, Harry J., Brooklyn, N. Y.
Scherding, John C., New York, N. Y.
Schnackenberg, Karl, Brooklyn, N. Y.
Schweizer, Frederick P., New York, N. Y.
Seeker, Albert F., Brooklyn, N. Y.
Sheirs, William J., New York, N. Y.
Smith, C. Wesley, Shelter Island Heights, N. Y
Smith, Chas. Wetmore, Cornwallville, N. Y.
Smith, William W., Norwood, N. Y.
Stephens, C. Lewis, Marcus, Pa.
Teitelbaum, Benjamin, New York, N. Y.
Theis, Adolf, Brooklyn, N. Y.
Thielke, Paul O. L., New York, N. Y.
Thornhill, Sewell, Wappingers Falls, N. Y.
Timmerman Richard H., Brooklyn, N. Y.
Trowbridge, Frank W., Catskill, N. Y.
Uhe, Edward Brooklyn, N. Y.
Van Buskirk, Herbert C., Saugerties, N. Y.
Van Stone, Theodore E., Hackensack, N. J.
Vincent, William C., Brooklyn, N. Y.
Vogel, Karl M., Norwalk, Conn.
Weber, George C., Elizabeth, N. J.
Westheimer, David, New York, N. Y.
Wiedemann, Henry, New York, N. Y.
Zeiner, Eugene J., Brooklyn, N. Y.

At the last examination of the New York City Board of Pharmacy the following passed: Rich. H. Timmermann, Nelson T. Bogert, Eugene Errett, Robert H. Lisberger, Herman Klein, George H. P. Carter, Wm. Isemann. During the month eighty pharmacists were registered. Dr. Cyrus Edson was re-elected president and Dr. Wm. Balser secretary of the board. The next examination meeting of the board will be held on June 8th, at 9 A. M.

THE
Alumni Journal

Published Monthly under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK.
115-119 WEST 68th STREET.

Vol. III. June, 1896. No. 6.

SUBSCRIPTION:
Per Annum, . . . One Dollar
Single Copies, . . . 15 Cents.

All communications relating to subscriptions for the Journal, should be addressed to Nelson S. Kirk, 9 East 59th Street, New York City.

All communications intended for the Editor, original contributions, exchanges, books for review, etc., should be addressed to
Alfred H. Mason,
59 Maiden Lane,
New York City.

All communications relating to advertisements or to the business of the Journal, shall be addressed to
Thomas M. Davies,
543 Third Avenue,
New York City.

All copy for publication, (written on one side of the paper only), or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

EDITOR PRO TEM.
ALFRED H. MASON, Ph. C., F. C. S.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

Outing Day, Wednesday, June 17th, is what we must look forward to now. The members of the Association and their friends should make every effort to be present, each determined that one and all shall have an enjoyable time.

Alumni Day 1896, has passed. All reports testify that it proved a great success. We congratulate the committee on this success, and we acknowledge the enthusiasm of the reporters, and thank them for their assistance.

Commencement Day 1896, has also passed. We congratulate the class of '96 that this event proved one of the most brilliant of its kind. The decorations of the platform were handsome, and whilst the boys did the work which "talks," we must not forget what a debt of gratitude the college owes to Messrs. Atwood, Macmahan, and Massey, the committee who so successfully carried out all the details. This was the last public official act of President Samuel W. Fairchild, whose dignified and urbane manner in conducting the proceedings contributed largely to the success. Mr. Fairchild retires from the presidency after a long, trying, but faithful service of six years, during which period great things have been accomplished for the college. On his retirement he carries with him the gratitude of the whole pharmaceutical world for the success which has attended his efforts, and the highest esteem of all those whose privilege it has been to have been associated with him in the work.

We all welcome our new President, Mr. Edward Kemp, who takes office today. He is a wholesale druggist and manufacturing pharmacist, and head of the firm of Lanman & Kemp. Reference to the *Pharmaceutical Era*, March 19, 1896, will tell you something of the good qualities of our new President.

Mr. Horatio N. Fraser retires from the office of treasurer. He has been associated with Mr. Fairchild in this capacity during his whole term of office, and in various ways has greatly contributed to bring about the success which has been achieved. With his knowledge of finance and his personal magnetism with financeers, he has been able to tide us over troublesome waters, and we are indebted to him for his generous assistance. He is succeeded by Mr. Herbert C. Robbins, of the firm of McKesson & Robbins, who is also President of the New York Quinine and Chemical Works, so that our funds (if we can keep them) will be in good hands. We are glad to welcome Mr. Robbins also, trusting that contributions will reach him so rapidly that his anxieties will be made as light as possible.

DR. ARTHUR H. ELLIOTT who has for the past twenty-five years faithfully and energetically served the college as Prof. of chemistry and physics, found it necessary to resign the position. The Trustees however, have unanimously elected him Professor Emeritus of chemistry and physics, so that the boys will hope to see him once a year. We congratulate him upon his well deserved honor.

HENRY A. VOGHT, PH.G., '87, and Joseph Skudin have been elected members of the college.

WE sincerely congratulate those students of the post-graduate course, who successfully passed the requisite examinations, and were elected Doctors of Pharmacy (Phar.D.) We shall publish matters of interest to them in our next issue. We would now, however, venture to caution them against temptations, which we trust a graduate from our college will never disgrace us by falling into. The first is, to attach Ph. D. after a name. This must never be, as it would be adopting a signification (a scientific degree), which, by right belongs to others. The second is, when being called "Doctor" by a customer, to see to it, that there is no desire to pose as a medical man. Such action would be dishonest and only bring discredit upon the honor which you have attained; rather be proud of your distinction Phar.D., which is of as much, or more value to you than those degrees which are claimed by and belong to those who have attained them.

ORANGE JUDD GRIFFIN.

Few of those who have been associated with the College during the past twenty years, either as officers, faculty, members, graduates or students, will fail to recognize, the genial Clerk of the College of Pharmacy of the City of New York.

Joining the College in 1876 as a special student in the chemical laboratory, in 1879 he was appointed assistant to Professor Charles Froebel, who then had charge of the laboratory, which position he held until the retirement of the Professor, in 1884.

In 1881 Mr. Griffin was appointed Clerk to the College, and he has so faithfully filled the position during the vicissitudinous adolescence of the institution, that upon its bursting forth into manhood he remains the environment of an unwritten cyclopædia, always cheerfully at the service of those who seek information from him.

The position is by no means a sinecure, as some may suppose, but on the contrary, necessitates constant attendance and plenty of hard work, to lighten the labors of the various officers, committees and faculty, but the duties are filled in a courteous manner, which is appreciated by all those associated with him. An evidence of this lies in the fact that at the last election of officers Mr. Griffin was unanimously elected Assistant Secretary of the College.

As a photographer, Mr. Griffin is quite an expert, and the many illustrations of the college and its different departments, which appear in the Prospectus and various journals, are all his work, for which we owe him a debt of gratitude.

Mr. Griffin resides at Flushing, L. I. He is an enthusiastic cyclist, often availing himself of this means of reaching the college. He is a member of the "Mercury Wheel Club" and the L. A. W.

Mr. Griffin is a notary public and an ardent republican. He was for several years Chairman of the Flushing Republican Town Committee, member of the Queen's County Republican Committee and is now Secretary of the Republican Club of Flushing.

As the responsibilities of the position increase with the rapidly increasing importance of the New York College of Pharmacy, we hope all will appreciate what is being done by so faithful a servant and officer, and that he may be spared for many years diligently to continue his labors in the position he so worthily fills.

* * *

THE pharmacy of K. J. Ferrein, at Moscow, Russia, is thought to be the largest in the world. As many as twelve hundred prescriptions are put up in one day. The dispensing is done in a glass domed room, where about twenty-four assistants are employed, and a large clerical force is required to take orders and deliver the goods. If poisonous drugs are used in putting up a prescription, the checking of weights is done by a weigher specially employed for the purpose. The annual number of prescriptions is not far from 300,000. Two hundand ninety-three men and boys are employed in the wholesale and retail departments of the establishment.

THE SUMMER OUTING.

There is no event of greater social importance, or more enjoyable, than the Summer Outing of the Alumni Association. This year the Committee have taken unusual pains to provide for the best Excursion ever held by the Association. Arrangements are completed for Wednesday, June 17th, to visit Point View Island, near College Point. The party will meet at the Long Island Depot in Long Island City at 1.20 P. M. This point is conveniently reached from all parts of New York and Brooklyn by the various car lines and the ferries from Peck Slip and 34th street, New York. From Long Island City the party will go in special trolley cars to College Point, passing through some of the most beautiful suburbs of New York, and several quaint and picturesque villages on the way, as well as several points of historical interest. Arriving at College Point, the party will be conveyed in carriages to Point View Island, which is without doubt one of the most beautiful spots on Long Island Sound. There are broad piazzas and cosy summer houses, spacious lawns and a beautiful stretch of beach, where those so inclined can enjoy a still water bath or a delightful stroll. The old house itself, surrounded by majestic shade trees, is of more than passing interest, having been for some time the quiet country retreat of New York's once famous William M. Tweed. Many of his great schemes were planned here.

During the afternoon there will be a match game of base ball (the place is provided with three large ball grounds), prize bowling, shooting, football, a 200-yard dash for those under 150 pounds in weight, a 100-yard dash for fat men, only those over 175 pounds being eligible; a ladies' race, half mile run, potato race and other athletic sports. Besides these there will be boating and dancing, and, last, but not least, a first-class dinner. This is one of Mr. Witzel's chief attractions, as the members of many well-known New York and Brooklyn Clubs can testify. The ride home will be one of the features of the outing. The entire cost of the transportation has been fixed at 65 cents return, tickets can be had from any member of the committee, or at Long Island City on the afternoon of June 7th. The committee are: Geo. F. Burger, Thos. M. Davies, Rudolph Gies, Nelson S. Kirk, Peter J. Ehrgott and Alfred Stover, *ex-officio*. A special invitation is tendered to the classes of '96 and '97 and their lady friends.

Alumni Column.

"ALUMNI DAY."

As one entered the lecture hall of the college on the afternoon of May 6th, he could not have failed to be impressed by the unusual gaiety, lent the occasion, by the beautiful decorations and the abundance of fair "femininity" even before the exercises had been commenced. The hall was profusely decorated with flags and bunting, the college banner being prominently placed over the platform, and the '96 class banner also conspicuous.

The audience was the largest and most enthusiastic that ever attended "Alumni Day Celebration." the hall being well filled. The '96 boys arrived early on the scene, and their presence was continually manifested by the war-hoops and class yells emitted by their seemingly brazen lungs. The cry which seemed to be mostly in favor with them was :

"Ethane ! Methane ! Cochineal !
Argol ! Menthol ! Brom-Ethyl !
Wahoo ! Wahoo ! Wahoo ! Wix !
N. Y. C. P. Ninety-six.

It was evident that the boys had entirely recuperated from whatever fatigue and exhaustion the recent examinations had caused them, and they seemed anxious to impress the fact upon the visitors present. Nor were '97's cohorts lacking in these uproarious reverberations. From what the writer could distinguish in one of their harmonious and melodious whoops he learned that

"All good pharmacists go to Heaven,
So would the class of ninety-seven."

Thus the class yells periodically rent the air, rivalling each other in intensity and enthusiasm, until the chairman of the Alumni Day Committee, Hieronimus A. Herold, '94, opened the exercises with an appropriate and witty address.

Mr, Herold explained the objects of alumni day, and spoke of its importance to the Junior and Senior classes. He congratulated the members of the graduating class upon their success, and those of the Junior Class upon their remarkably good showing at the examinations. He extended a cordial invitation to the Senior class to join the ranks of the alumni, and expressed the hope that the Juniors would, in time, do likewise.

The following programme was then rendered:

PART I.

1. SONG, "To the Front," Stephen Adams
ALFRED H. MASON, Ph. C., F. C. S.
MISS MARJORIE MASON, Accompanist.
As an encore Mr. Mason gave "The Armourer," from "Robin Hood"
2. PIANO SOLO,
MISS HULDA OSTRANDER.
3. COMIC RECITATION,
"My Experience on a Velocipede."
MISS NELLIE GAFFNEY.
4. TENOR SOLO,
"The Picture of My Daddy when a Boy."
GUSTAV T. RUCKERT, Ph. G.
5. FANCY DANCING,
LITTLE LOTTIE LYNCH.
6. BASSO SOLO, { a. "Answered." b. "Afterwards."
RUDOLPH GIES, '95.
7. SELECT READINGS,
a. "Reveries of a Bachelor," - - Thackery
b. "That Old Sweetheart of Mine" J. Wh. Riley
B. RUSSELL THROCKMORTON.
8. BARITONE SOLO,
E. A. BISCHOF, Ph. G.
J. F. WINGEBACH, Accompanist.

PART II.

1. PIANO SOLO,
MISS HULDA OSTRANDER,
2. AWARDING OF ALUMNI PRIZES,
By ALFRED STOVER, Ph. G., F. C. S.,
President of Alumni Ass'n.
3. FANCY DANCING,
LITTLE LOTTIE LYNCH.
4. SONG, "The Midshipmite," Stephen Adams
ALFRED H. MASON, Ph. C., F. C. S.
MISS MARJORIE MASON, Accompanist.
5. READING, "Cho Che Bang and Chi Chil Bloo," Anon
B. RUSSELL THROCKMORTON.
6. BARITONE SOLO,
EMIL A. BISCHOFF, Ph. G.
J. F. WINGEBACH, Accompanist.
7. RECITATIONS,
MISS NELLIE GAFFNEY.

Of the foregoing participants, Mr. Alfred H. Mason is an honorary member of the Association, editor of THE ALUMNI JOURNAL and an ardent worker in the interest of the college and the Association. Mr. Throckmorton and Miss Gaffney are professionals, have been heard before on our Alumni Days and are great favorites. The applause which greeted their efforts bears evidence of their popularity. All the other performers acquitted themselves worthily and to the credit of themselves, and the committee are to be congratulated on the selection.

Dr. Diekman, as Chairman of the Examination Committee of the Alumni Association, read the roll of honor of the Junior Class. Dr. Diekman wanted to read the list from his seat in the audience. The boys simply would not have it, and after the second unsuccessful effort the genial Doctor was compelled to ascend the

Officers of the N. Y. C. P. Alumni Association, 1896-7.

ADOLPH HENNING, Treasurer; ARTHUR C. SEARLES, President; A. HOBURG, JR., Secretary; KATHERINE C. MAHEGIN, Registrar.

platform and receive his share of the applause. He is as popular as ever with the students.

The Roll of Honor is as follows:

Emil Trostler	96.04	per cent.
John Glassford	94.48	“
Henry C. Becker	94.28	“
William H. Rogers, Jr	93.50	“
Julius Schultze	93 37	“
F. J. Hubbard	92.40	“
Willard H. Roberts	92.34	“
Frank Rutherford	91.95	“
Miss Lillian Henak	91.33	“
A. Luderer	90.90	“
H. J. McKellar	90 78	“
Ralph M. Smith	90.52	“
George Ferdinand	89.22	“
Geo. F. Peterson	89.22	“

To the first three, Messrs. Trostler, Glassford and Becker, President Stover presented the Alumni prizes in the order of merit. The exercises were followed by the regular annual meeting of the Alumni Association. J. KUSSY, '94.

Alumni Association.

ANNUAL MEETING OF ASSOCIATION,

Lecture Room. May 6th, '96.

THE meeting was called to order by President Stover at 5 P. M. There were present the following members:

Alfred H. Mason, honorary; A. Henning, '76; L. G. B. Erb, '94; J. Tannenbaum, '93; N. S. Kirk, '94; Chas. S. Erb; Thomas M. Davies, '94; Wm. H. Madison; Fred. W. Lumig, Jr., '94; Rud. Boenke. '95; J. Siegmann, '93; Rudolph Gies, '95; Alfred Stover; George F. Burger, ,94; H. B. Ferguson, '95; G. C. Diekman, M. D., '88; A. C. Searles; K. C. Mahegin, '89; C. G. Bruckmann, '81; Eugene F. Lohr, '93; G. Strassburger, '89; H. Graeser, '89; H. Kreuder, '94; H. A. Herold, '94; W. A. Hoburg, Jr., '93.

Motion made by Mr. Graeser, that the reading of the minutes of the Executive Board be dispensed with. Seconded and carried.

ADDRESS OF THE PRESIDENT

OF THE ALUMNI ASSOCIATION,

ALFRED STOVER, PH.G.

Ladies and Gentlemen of the Alumni Association, Fellow Students and Friends: Again the hand of time has passed round the dial of life's chronometer and another twelve months of the history of our Association has been recorded in the sealed book of the past, where no alterations or erasures can possibly be made. Whether or no the past year has been one of triumphant success or one of discouraging failure, each and every member present knows full well how much has been his or her personal contribution toward making the past record what it is, All are equally interested and responsible, but I very much regret that all do not take up an equal share of the work.

I see to-day some who, one year ago (when you again honored me by electing me your President), promised to attend all the meetings held during the year, and to lend their aid in every possible way toward building up the Association. Some are present to-day for the first time since that meeting. I am heartily glad you have not entirely forgotten your promises and that there still remains a day of grace in which the good resolution can, in part, at least, be carried out. We have missed you during the year, the Association has missed your counsel as well as your work, and you too have missed much that would have been a pleasure and perhaps a benefit to you. Let me urge upon you with all the earnestnees I can command to make an effort this coming year to attend the meetings regularly and help support your officers in their efforts for our common good.

To-day our Alumni Association passes the quarter of a century mark, and I trust it is entering upon a new era of usefulness. Few who were present at the first meeting, held on May 24, 1871, are left to the Association to-day, the majority having passed away, among whom were P. W. Bedford, George C. Close and Jules L. A. Creuse. Some of us here to-day knew and labored with these gentlemen in Alumni work, and can testify to their untiring zeal and enthusiasm. We also find among the list of early workers the names of Ewen McEntyre, Thos. F. Main, William Wright, Jr., Lucene M. Royce, Byron F. McEntyre and Theo. Frohwein. Some of these gentlemen still honor the Association with their presence and are always enthusiastically welcomed, but the active work has for some time past devolved upon the younger members, and many of them in turn are making honorable records for themselves. The first lady to join the Association was Dr. Mary Putnam Jacobi, who was a member of the Class of 1863 and the first lady graduate of our college. Time will not permit of more than this passing notice concerning our early history and the work accomplished, of which we are justly proud. The memories of our former associates are held almost in reverence, yet it is mete that we turn our attention for a moment to the work of the present time. It is part of the duties of the President to present an address at the annual meeting, in which the work of the year past is reviewed, and also to make such suggestions and recommendations for the future as he may deem advisable.

When I again assumed the duties of President I found all matters appertaining to the Alumni Association in a most flourishing condition, my predecessor, Mr. Graeser, having been an indefatigable worker, in fact, one of the best Presidents the Association ever had, so most things were very satisfactory. In looking, however, over the needs of the Alumni, I was only strengthened in my former belief that what we required was more sociability, more fraternity and more intercourse with the undergraduates. My efforts during the entire year have been used with that end in view. How well I have succeeded, or whether the theory is a correct one or not, I will leave you to judge.

The first social gathering was the annual outing, which had been arranged by my predecessor, as is customary, coming as it did just at the beginning of the executive year. This was held at Bay View Park, City Island, on Wednesday, June 27th, and was as usual a decided social success. The afternoon was well and pleasantly spent.

With the commencement of fall the active work of the Association was resumed and the social features before suggested were put into practical operation. A pianoforte was purchased by the Association, an entertainment committee appointed and a series of social entertainments inaugurated. Each Wednesday evening the Alumni rooms have been open to the members, students of the college and their friends. Each of these occasions has given entire satisfaction to all who were so fortunate as to be present. Through the courtesy of the President of the college the use of the library and adjoining rooms were secured, and three sociables or "ladies' nights" held, at which a programme consisting of music (both vocal and instrumental), recitations and dancing was presented. These were largely attended by the students of the college and formed bright spots in the college year.

On January 22d, 1896, the "First Annual Ball of the Alumni Association" was held in the banquet hall of Madison Square Garden, and it is but just to the committce having charge of the arrangements to say that they did their work faithfully and well. It was in all respects a flattering success, financially as well as socially; a gathering that any association might be proud of, and marked, I believe, the first of our regular annual receptions.

During the term, seven lectures have been delivered in the lecture room as follows:

Oct. 9, 1895, "Pharmaceutical Jurisprudence,"
By Hon. Geo. F. Roesch.

Nov. 13, 1895, "Poisonous Plants of the Vicinity of New York City,"
By Dr. H. H. Rusby,
(Illustrated with Stereopticon Views,)

Dec. 11, 1895, "Generation,"
By Dr. H. A. Haubold.

Jan. 8, 1896, "Our Common Poisons and Edible Mushroons,"
By Dr. S. E. Jelliffe,
(Illustrated with Stereopticon Views.)

Feb. 12, 1896, "Five Minute Glimpses of Europe,"
By H. A. Heydt, Ph.B., L.L.B.

Mar. 11, 1896, "Bright and Dark Sides of Hospital Life,"
By Wendell C. Phillips, M. D.
(Illustrated with Stereopticon Views.)

April 8, 1896, "Mountain Climbing in Switzwerland,"
By H. A. Heydt. Ph.B., L.L.B.
(Illustrated with Stereopticon Views.)

Most of these lectures have been very well attended, and have attracted much interest and attention; nearly all of them have been published in The Alumni Journal, and reprinted in other pharmaceutical journals. Last, but by no means, least of our social events has been "Alumni Day," the exercises of which all present have witnessed. These annual reunions have become a permanent part of the Association year, and almost as indispensible as the annual meeting itself with which it is so closely associated.

During the past year our Alumni Journal has continued to grow in popularity and general favor. The business management has been placed in the hands of Mr. Thomas M. Davies, who is well adapted for the office, and the general outlook of The Journal is bright indeed. Our members should give all the support in their power to The Journal.

The general attendance at both the Executive Board and Association meetings has been unusually good, not once during the year has a meeting been postponed for want of a quorum, as was frequently the case in former years. Besides the social gatherings and lectures, twelve business meetings have been held; six Executive Board meetings, and six Association meetings. The executive attendance has been as follows:

		Executive Board.	Association Meetings.	Total.
President	Alfred Stover	5	6	11
Vice-Pres.	A. C. Searles,	2	2	4
" "	D. T. Larimore,	0	0	0
" "	Otto Hensel,	0	0	0
Treasurer	A. Henning,	6	6	12
Secretary	Wm. Hoburg, Jr.,	4	6	10
Regist'r	Miss K. C. Mahegin,	1	2	3
Executive Board one year.	F. Hohenthal,	2	1	3
	Henry Kreuder,	5	4	9
Executive Board two years.	W. Johnson,	1	0	1
	Nelson S. Kirk,	6	5	11
Executive Board three years.	Tim. B. Breen	1	1	2
	H. A. Herold.	4	3	7

While the Alumni Association has been unusually active, the college itself has greatly extended its field of usefulness as well as giving to the pharmaceutical profession, a system of advanced education unequalled by any college of pharmacy in the world, and as might be expected amongst the post graduate students were some of the active workers of the alumni.

I would recommend that the constitution be so amended as to make the Entertainment Committee a permanent committee, to be appointed annually by the President, said committee to arrange and have charge of the social meetings of the Association.

That an "annual reception" similar to the one held in January last be made a permanent part of the Association year.

That all executive members failing to attend a given number of regular meetings without giving good and sufficient reasons for their absence, be dropped from the list of officers, and their places filled by the President.

That all Association meetings be made open to members of both the Senior and Junior classes, and that the spirit of sociability and fraternity be encouraged in every advisable way.

In conclusion, let me urge our members, one and all to stand close to their alma mater, and not let an opportunity pass to do a kindly act or lend a helping hand to the first college of pharmacy in the land, "The College of Pharmacy of the City of New York."

Motion made by Mr. Graeser that the address of the President be referred to the editor of The Alumni Journal for publication, and also to enroll same on the minutes of the Association. Seconded and Carried.

Treasurer's report was then read by the Treasurer, Mr. A. Henning, * * and the Auditing Committee, Messrs. Gies, Kirk and Burger, having reported favorably on same, the report was adopted on motion.

COMMITTEE REPORTS.

No report from the delegates to the American Pharmaceutical Association, as none were present.

Papers and Queries Committee.—Mr. H. Graeser, chairman, reported on same. Motion made, seconded and carried, that the chairman of the said Committee be discharged with thanks of the Association.

Publication Committee.—Reported progress.

Entertainment Committee.—Report read by Chairman Kirk * * * report accepted, and ordered entered in full on the minutes.

Registrar's Report.—Miss K. C. Mahegin reported progress. Report accepted.

Mr. H. A. Herold was appointed a committee of one to codify and revise the by-laws of the Association, with the assistance of the Secretary.

Examination Committee.—Report made by chairman, Dr. Diekman, and accepted. * *

NEW BUSINESS.

The following two amendments to the By-Laws of the Association were proposed :

Mr. Kirk—

Article V., Sec. 4. Any member of the Executive Board not attending three regular successive meetings without a reasonable excuse shall be dropped from the Board and his successor at once elected.

Mr. Henning—

No member in arrears will be eligible to vote at an annual meeting.

Motion made by Mr. Searles that they be entered in the minutes and that they take the regular course. Seconded and carried.

The President appointed the following gentlemen to serve on the Outing Committee: Messrs. Burger, Davies, Gies, Ehrgott and Borggrere.

ELECTION OF OFFICERS.

President.—Arthur C. Searles nominated by H. Graeser.

First Vice-President. — William H. Ebbitt nominated by Jules Tannenbaum.

Second Vice-President.—H. A. Herold nominated by Nelson S. Kirk.

Third Vice-President.—Motion made, seconded and carried that election for this office be postponed until later.

Secretary.—Wm. A. Hoburg, Jr., nominated by Eugene F. Lohr

Treasurer.—A. Henning, nominated by Geo. F. Burger.

Registrar.—Miss K. C. Mahegin nominated by H. Graeser.

Executive Board, three years.—Dr. Geo. C. Diekman, by H. Graeser; Alfred Stover, by Geo. F. Burger, To finish unexpired term of H. A. Herold, (elected Second Vice-President) Dr. Henry Kreuder nominated by H. Graeser.

All were unanimously elected to the respective offices.

Motion made by Mr. Graeser and seconded by Mr. Searles that Art. VI , Sec. 2 of the By-Laws, which reads as follows, viz.—" No graduate shall become a member of this Association, nor have his name placed upon the roll, until he shall have paid to the Treasurer the sum of three dollars ($3.00), entrance fee, and his annual contribution for the current year "—be set aside for the day. Carried.

Motion made by Mr. Graeser and seconded by Mr. Searles "to admit the entire graduating class of the year 1896 as members of this Association, and to enroll their names on the books, after the payment of one year's dues, dropping the initiation fee altogether." Motion carried, the Secretary casting one affirmative ballot.

Motion made and carried "that the election of Third Vice-President be defferred until the June meeting of the Association "

President Stover then introduced the editor *pro tem* of The Alumni Journal, Mr. Alfred H. Mason, as a newly elected honorary member of the Association. Mr. Mason addressed a few well chosen remarks in reference to The Alumni Journal.

Mr. Graeser extended a vote of thanks, on behalf of the Association to President Stover for the efficient manner in which he has served the Association as its presiding officer.

There being no further business to transact, the motion to adjourn was promptly carried.

Wm. A. Hoburg, Jr., Secretary.

College Notes.

'93 NOTES.

Alumni Day this year went off with the usual quota of success. The '93 boys who were edified by the excellent programme were, Hoburg, Seigmann, Tannenbaum, F. M. Stage and Cannon.

Commencement was, if anything, more brilliant this year than ever before, and, although we from way back in '93, realized that we were what "Chimmie Fadden" would call, "also rans," we managed to show that the class was still alive. We all felt duly honored to see our friend and classmate, Wm. Hoburg, Jr., Ph.G., on the platform with the Faculty. Lehmann, Lintmann, F. M. Stage, Dr. McCarthy, Tannenbaum, Powers, Schreiner, Cannon, Ricksecker, Cubit, Schopfer, Ihmels and Johnson were the '93 members present.

Dr. J. F. McCarthy, was the only representative we had in the post-graduate class, but nothing can go on without one of our '93 boys being distinctly in it.

Lost! Lost somewhere between sunrise and sunset, two golden hours each set with sixty diamond minutes, looking for R. Brodil, whom rumor said was located on upper Third avenue, No reward is offered as they are lost forever.

John C. Taylor, of Mexico, N. Y., writes that he would like to come to New York, (can you blame him?) but cannot find the time. He owns a store and gets full prices for all goods. If any other class has a representative who is doing likewise, let him now speak or forever after hold his peace, as we are going to make a claim as having *the* pharmacist in our class.

Chas. Matthews has a position in one of the leading pharmacies of Oswego.

Otto Johannsen is with Messrs. Wanier & Imgard. He rides a wheel, and according to present indications will break all previous records. He debated for several days, not to mention the nights, whether to adopt knickerbockers or bifurcated skirts. After many sleepless hours the "knickeys" won.

The gay and festive Twomey, signified a desire to come to commencement but did not materialize. He wrote me a very sporty letter all about trotters and thoroughbreds. This fifth story life is high.

Ihmels, unsophisticated youth, enclosed a stamp for a reply when he honored me with an epistle. Take him for your model, brethren, and I will have more cigarette money.

F. M. Lawrence, the silver-tongued orator of King's County, has opened a store on Murray Hill, Flushing. May all possible success attend your efforts, Oh! Cicero Lawrence.

Francis E. Crispin, our first prize man is occupying a successful pharmacy at Greene and Nostrand avenues, Brooklyn.

Now for the outing. Every man who can possibly come must be there. We wish to make this outing the most successful one the Association has ever held. Come, everybody, and bring your friends with you; you will find full particulars announced in The Journal. Page 149.

Eugene F. Lohr, Ph. G.
375 Third Avenue.

'94 NOTES,

That spirit of enthuisaism, characteristic of '94, has never exerted itself more forcibly than in the past month. On "Alumni Day" our delegation was a factor, ditto "Commencement Night," as many will testify.

My last talk to those delinquents who had not remitted their dues, has had the desired effect. You may say that talk is cheap, but I have always noticed that the parrots who talk most bring the highest price.

One of our boys who tried to raise a hirsute appendage on his chin, met with disasterous results. This is the cause :

He tried to press his cheeks to hers,
She tried her cheek to save
And said, "Come round to-morrow eve,
Here's 10 cents for a shave."

On Sunday, May 3, the N. Y. C. P. cyclers had a run to Bergen Point, Port Richmond and St. George. Owing to the inclemency of the weather, the participants numbered three, Col. Wade, friend and Kirk. A fortnight later and over the same course, the delegation besides the above named, included Messrs. Erb, Stock and Eater, with Dr. and Mrs. Coblentz. Owing to a puncture in the Coblentz tandem, Erb had an opportunity of putting his mechanical skill into practice, which he did in a most thorough way.

When last seen, Sergt. Davies was quiet busy arranging a series of athletic events for the Alumni Outing. The prizes should be a bottle of anti-fat for winner of fat man's race, a month's rent free for winner of married man's race, and a bottle of aqua dest (?) for the first man in the Junior event. These are only suggestions.

Henry G. Born, of whom I frequently talk,
Has purchased a store in greater city New York,
"He don't make his own salt," although a profit seeker
Experience teaching him that he can buy it cheaper.

THE fine appearance of ex-Secretary Linning on Alumni Day, was the cause of considerable comment. He wasn't alone either.

EX-PRESIDENT EHRGOTT is taking an active interest in Alumni affairs. On "Commencement Day" he hustled for '96 applications. He has been appointed a member of the Outing Committee.

FRANK N. POND is again in the city. He has accepted a position with Mr. Lagat, on Amsterdam avenue.

TERSLY TOLO. Van Nuis is married, particulars vague. Frank T. Wilcox made a flying visit to this city May 8th. Clarance W. Race is now an active member of the Century Wheelmen. Drs. Kreuder and Wurthman have just passed the ordeal, particulars again unknown, but we expect it is success with a big S.

GRADUATES and students of the C. P. C. N. Y. who are devotees of the wheel and would enjoy an occasional run under the "Blue and Gold," are requested to send their address to Ludwig Erb, 539 East 88th street, who is captain of the C. P. C. N. Y. Cyclers, and will take pleasure in notifying them of club runs. Captain Erb is arranging a "Century," to take place in August or September.

CORNELIUS D. KAY, whose marriage was quietly made known to me a few days ago by a '94 boy, is with Messrs. Clark & Co., Grand street and Communipaw avenue, Jersey City. Ferdinand N. Sauer is with Mr. Lockheart on Newark, avenue, Jersey City.

NELSON S. KIRK, PH. G.

'95 NOTES.

IT is a pleasure and also a duty for me to state that Messrs. Bjorkwall, Ferguson, Gies, Jorgensen, Neiderer and Ogden, received the degree of Phar. D. on "Commencement Night." Our class can congratulate itself on the fact that six members of the post-graduate class are of the '95 class. I deeply regret that I was unable to be present, and therefore cannot give my report of the notable event.

LOST.

MESSRS. Scott, Seery Sherman, Sirota, Sloat, De Sota, Steinach, Stearns Strack, Sur, Sutorius, Sweeney, Toye, Vanderbeck, Volkman, Watling, Wendel, H. D. Wells, White, Woell and Zeh. Any information relating to the above named gentlemen will be thankfully received.

FOUND.

THUM, who was with us during our Junior and part of our Senior year, is with his father in Broome street.

LURCH is with Mr. Siefert, corner 40th St., and 3d avenue.

OWENS writes from the "Jersey Wilds" that he has joined the benedicts of onr class, and that he and his wife spend their leisure time on wheels. He is still with Mr. E. M. Mount, Ph.G., at 200 Washington street, corner Morris sireet, Jersey City, where he has been for the past seven years.

FRED. L. FRICK is an ardent worker in Mr. Simon Nauheim's pharmacy, Lexington avenue and 59th street.

RUD. BOENKE, Ph. G.,

'96 NOTES.

EX-TREASURER GEO. H. CARTER has accepted a position in the prescription department of Mr. Wm. Wilson's pharmacy on Herald square, this city.

NEWSY AND PERSONAL.

WM. M. RHEINECK, '89, is manager of Mr. Otto Frohwein's pharmacy, 91st street and 3d avenue, New York.

HERMAN A. R. GRAESER, '89, has joined the mighty throng of wheelmen, and is now enjoying a vacation, having finished his second year at the P. and S.

OWSLEY, Schlichter, Pisani, and Casazza, graduates of our college, will be graduates of the P. and S. this year.

PAUL FROHWEIN, '79, has the distinction of being apothecary on the U. S. S. "Alert," with the rank of warrant officer.

HERMAN HASSLOCHER, '76, has been superintendent of George Ehret's brewery for the past ten years.

GUS. STRASSBERGER, '89, has become a benedict. He is a partner in the firm of Eisner & Mendelsohn.

GRANT J. WOOLSTON, '90, is now with Messrs. Livingston & Wenzel, 384 Broadway, Brooklyn.

WILLIAM H. TYLER, '82, has a pharmacy at 678 2d avenue, New York.

THE "ladies' race" at our Outing should prove a successful attraction. It would be a novelty if our lady Ph. G.'s would participate.

GEO. F. BURGER, PH. G.

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. No. 7.

July, 1896.

Contents:

LECTURE — MOUNTAIN CLIMBING IN SWITZERLAND, - - - 157
HERMAN A. HEYDT, L.L.B., Ph. B.
ON THE PREPARATION OF WATER FREE FROM AMMONIA, - - 164
JOSEPH BARNES, F. I. C.
INSECTS ATTACKING DRUGS, - 165
PROF. L. E. SAYRE.
THE EDUCATION OF CHEMISTS, - 168
DR. C. DUISBERG.
TRANSFORMATIONS OF MENTHOL, 173
BECKMAN AND EICHELBERG.
PROXIMATE ANALYSIS OF POLYGALA SENEGA, - - - - 174
CITRONELLAL, - - - - - 174
EDITORIAL, ... 175
  THE POST-GRADUATE EMBLEM, 176
  DOCTORS OF PHARMACY OF THE FIRST POST-GRADUATE COURSE (biography), - - - - - 176
ALUMNI COLUMNS, - - - - 178
CLASS NOTES, Class '93-'94, - 180
" " " '95, '96, - 181
OBSERVATIONS BY A MEMBER of the CLASS OF '81, - - - - 182
NEWSY AND PERSONAL, - - 182
ALUMNI ASSOCIATION, - - - 182
ALKALOID-STEARATES AND THEIR THERAPEUTIC APPLICATION, 183
EMULSIFIED COD LIVER OIL, - 184
P. C. ARBLASTER, Ph. C.

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . .

digestive inertia

Functional Atony, or whatever you may call it, is often at the bottom of a case of Infantile Diarrhoea during the summer months. If the digestive juices do not properly convert the food it ferments in the intestinal tube.

Lactopeptine

by artificially supplying the necessary digestive ferments, prepares the ingested nourishment for absorption, thus aiding in the restoration of normal function.

This is NOT THEORY, but
DEMONSTRATED FACT.

Be sure, however, that it's *Lactopeptine* and not some inert substitute. Send for samples and literature.

The New York Pharmacal Assoc. Yonkers, N.Y.

OLDEST STAND ON BROADWAY.

TRINITY CHURCH 1697
MILHAU'S PHARMACY
BALTIMORE 1813.
NEW YORK 1830.
AT 183 BROADWAY.
CORTLANDT ST
DEY ST.
TRADE MARK.
ST. PAUL'S CHAPEL 1764

THE "ANIMAL EXTRACT CO.'S"

CARDINE, heart extract, for Heart troubles
CEREBRINE, brain extract for Epilepsy, Brain, Nerves, Hysteria, etc.
MEDULLINE, extract of Spinal Cord, for Locomotor-Ataxia, etc.
MUSCULINE, for Muscular Rheumatism,
OVARINE, for Diseases of Women, Sterility, Nervous Prostration, etc.
TESTINE, for Nervous Debility, Impairment, Impotency Exhaustion, etc.
THYROIDINE, for Obesity, Goitre, Skin Diseases, Myxoedema, etc.

☞ *Positively guaranteed as the only brand always strictly according to Dr. Hammond's published formulas. $100 forfeit if not.*

Dr. DECLAT'S PHENIC PREPARATIONS, for Cancer, Consumption and all Fevers.

Medals awarded, Paris, Lyons, &c. for Phenic Acid and Compounds.

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER
183 Broadway, - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, July, 1896. No. 7.

MOUNTAIN CLIMBING IN SWITZERLAND.*

By Herman A. Heydt, LL.B., Ph.B.

Mr. Chairman and Friends :

I say "friends" for the reason that the cordial reception of last month and the pleasing welcome of to-night assures me that I am amongst friends. The subject, "Mountain Climbing in Switzerland," has been selected because it gives me an opportunity to speak from personal experience in the Alpine regions.

But before doing so I desire to speak a few words on mountain climbing generally. Like any branch of science, like any department of study, and like any accomplishment, it is an art. The fleet-flooted denizens of the mountain, devoid of the intelligence of man, are endowed with nimbleness, accuracy, precision and endurance, and thus we see the chamois or the mountain goats leap from crag to crag, over yawning chasms, and cling to precipices where a single slip would hurl them to the abyss below. But man has reason. He must study the laws which govern us, the theory of formation and the science of nature.

Fifty years ago mountain climbing was almost unheard of, and why? Because only a few of the brave would dare to wander into unknown regions and open the door for man's prying activity. Mt. Blanc, the highest peak of Europe, was not climbed till 1786, whereas now hundreds annually seek the impressive lesson of the wonders of nature in regions of eternal snows.

The climber of to-day studies the atmospheric condition, the state of the snow — whether soft or hard — and especially the nature of the rock, whether rough or jagged, or smooth and slaty. He studies the glaciers—does not consider them mere ditches of snow and ice, but he looks upon them with a scientific eye and knows that they move, and that although he sees one vast gorge coursing toward the valley, it is but a large artery, and that further up the mountain side the veins branch out and again split into smaller veins, all finally converging like the ribs of a fan and finding an outlet as a mountain stream in the valley below.

---

*Delivered before the Alumni Association of the New York College of Pharmacy, April 8, 1896.

The study of the glacier, however, is not complete. Professor Tyndal on Mt. Blanc demonstrated that the vast compact mass of ice actually moved. And the climber of to day, knowing these facts, realizes that there must somewhere on the mountain side be a vast reservoir plateau which feeds this glacier, and, tracing it to its source, finds the means of access to the peak. The prudent traveler also investigates the condition of the snow and ice in order to insure safety from any possible avalanches.

The next point to be considered is proper food and stimulants, but I regret to say I found most guides entirely ignorant or extremely careless regarding this important matter, and often saw them administer stimulants most indiscriminately. The constant climatic changes from a heavy to diminished atmospheric pressure renders it absolutely necessary that a rigid regard be had for the maintenance of the physical condition.

And lastly, the climbing implements must be carefully selected. To insure success in climbing the axe had to be invented and the use of the rope studied, and I am free to say that in both these particulars perfection has not been reached. The great Matterhorn accident of a few years ago taught a lesson. A large party, securely tied, were endeavoring to scale a precipitous and snow-clad peak, when one lost his footing and went down, carrying all the others with him, to meet death in the frightful, almost bottomless chasm. It taught the lesson that large parties are impracticable, and now we find one or two guides for three persons or three guides for five.

The foremost guide fastens the rope around his girdle, allows about six yards between himself and the climber, who also fastens the rope around him, and then it is attached to the guide in the rear, who acts as an anchor. Another acts as a porter and carries the provisions, being capable of carrying 80 pounds if long journeys are planned, as two pounds are allowed each person per day.

The Alps have been quite thoroughly explored, but yet they compare very insignificantly with the ranges of Africa, Asia and South America, where peaks pierce the clouds at altitudes of 25,000 to 29,000 feet, whereas the Jungfrau, the highest peak in Switzerland, is 14,000 feet, and Mt. Blanc (now by cession on French territory), 16,000.

Mr. Conway, the celebrated mountain climber, has made great observations in the Mustagh, Hindookush, Himalaya and Andes of Ecuador, and has demonstrated that man can reach an altitude of 24,000 feet, with the possibility of going higher. We can readily see from this that mountain climbing is yet in its infancy, and that the celebrated ascent of Mt. Blanc in 1786 was but child's play in contrast with future possibilities. Conway, however, has expressly called attention to the fact that the rarified atmosphere greatly impeded the ascent—an obstacle which man cannot counteract.

The exploration of the Alps has resulted in the creation of corps of mountain troops in Switzerland, France and Italy. Near the summit of Mt. Blanc I met a corp of Italian Alpini (as they are called)—a body of strong, well-disciplined men, carrying their rifles, food and ammunition with them. We can readily imagine how impregnable a mountain pass must be when guarded by such trained men, hence the security from invasion. It recalls to mind the story of Leonidas and Thermopalæ and the wonderful Alpine achievement of Hannibal.

And now, with this account, I will commence my personal experiences.

I am one of those patriotic Americans who is always ready to rave and storm and grow indignant at the tourists who leave our shores for Europe, instead of studying our own country first. I often argued that Europe has no Niagara, no Yosemite, no Yellowstone Park, no cañyons of Colorado, nor the caves of Kentucky, but yet at the first opportunity I flew—to Europe! How sublime to practice what we preach. My subject permits me to speak only of the mountains, hence I commence with Switzerland.

We entered from the south side—Italy—and through the great St. Gothard tunnel. The tunnel was a surprise to me. I had lived in the idea that I was to pass through an atmosphere as thick and dark as that which passed over Egypt in Biblical days, and remembering that the guide book said the tunnel was nine miles long I could not help but reflect at the vast opportunities for the osculatory exercise of which the comic books so often remind us.

But the tunnel was no such thing. I soon learned that it had not been constructed for the sweet exercise just spoken of, but was a gigantic, prodigious result of man's ingenuity. It was one steady, continual ascent in a serpentine manner, that we hardly realized we were climbing, over chasms, over roaring mountain streams, over stone bridges or high trestle work, as we crossed from one altitude to another, into one tunnel to emerge again only to enter another, into huge artificial caverns, or along a narrow ridge with a steep descent, directly below us, winding in and out, buried in the woodlands of nature. It was wonderful.

As we emerged from each tunnel we could look below and see the road we had just traversed, and realize how rapidly we were ascending from the sea-level. From our observation car we could look all over, and as I gazed about me and saw the luxuriant, productive valleys clad in the brightest of verdure, the nestling villages with their quaint, low houses, and as far as the eye could reach mountain upon mountain, rolling and toppling over one another, each one vieing for supremacy, I felt moved. Nature is eloquent in her silence.

Switzerland, although a fertile country, is hump-backed, and this, of course, retards agricultural developments. We therefore find the people skilled in finer arts—watch-making, wood-carving and lace weaving. Along the roadside we see the peasant girls seated and applying their deft fingers to the bobkins and weaving that exquisite lace for which they are famous. In the huts the sturdy mountaineer artistically shapes the small pieces of wood into any imaginable figure. The people are strong, sturdy, not intellectual, but honest and exceptionally tidy, and as amongst the Scandanavians, a Swiss house is a model of neatness.

We soon reached Lucerne, beautifully situated on the Lake of Lucerne, or as they call it, the Vierwaldstaetter Sea. Before us was the Rigi. I had heard so much of it that my heart throbbed in expectancy, for at last I was to enter the region of perpetual snow and ice. We took the steamer to Vitznau. The absence of all mountaineering preparations surprised me, but I was dumbfounded when we entered an incline railway, somewhat similar to the one on Mt. Washington, and had a most delightful ride to the top. No avalanches, no yawning abyss, no glaciers, no snowstorm—nothing but sunshine, grass and a fine hotel. I was disappointed.

Upon looking about me I soon realized why the Rigi is the Mecca of all Swiss tourists. It is somewhat higher than our Catskills, being not quite 6,000 feet high, but is so advantageously situated that an excellent panorama is afforded of the entire chain of Alps. From its summit we can see a range of mountains 120 miles long, the Sentes, Bernese range, Jungfrau, Wetterhorn, thirteen lakes and even the Black Forest of Germany.

This, however, was not my idea of mountain climbing, hence I determined to ascend Pilatus, a mountain overlooking Lucerne. Therefore, I ordered a carriage for three o'clock in the morning, and having prepared a knapsack of provisions, started out. The ride to the base of the mountain was a long one and the many villages we passed were still peacefully sleeping.

About five o'clock I dismissed the carriage and with my lunch and a staff started to ascend the Pilatus. The path led through mountain fields, up a slight incline, for several hours. Meanwhile the dawn had brightened, the sun rose spreading his mighty rays across the arch of sky, upon the undulating hills, and I felt serenely happy. At 7 o'clock I reached a small hut and knocked at the door. There was no answer, but just then I espied a buxum young woman coming down the steep, rocky mountain path, with a deep basket strapped to her back loaded with wood, and also carrying two pails of milk.

I asked her for a breakfast. Before the door of the hut was a small bench and table and I sat down to view the scenery. The country all round was locked in by huge receding hills, and above me rose the Pilatus, whose peak I attempted to reach. My repast consisted of goat's milk, honey and rolls, and I must confess I enjoyed it better than the table d'hote at the Grand Hotel, Paris.

I gave a quick glance into the room. The floor was the bare ground trodden hard, the rafters were laden with various articles of food and the walls decorated with sundry cooking utensils, all brightly polished. Everything had the appearance of tidiness and cleanliness.

My hostess was a very pleasant woman, and upon my inquiry she informed me that the small family lived happily on the mountain side, were accustomed to the solitude of winter and did not care for the outside world. How grand it must be to be simple and innocent and with no extravagant demands, but to live in peace and contentment. These people have no nightmares regarding the silver bill, tariff reform, the Hawaiian question or the Raines bill, but live in calm simplicity.

I started out once more, but the sun was now unmercifully hot. It may be well to remark that it was the middle of August, and in the valleys the temperature was just as high as we experience it here. Of course in the higher altitudes it must of necessity be cooler. I followed a well beaten path, and having replenished my water flask from a mountain stream continued onward. I climbed and climbed, although not with great difficulty, having followed a regular path, and about noon, exceedingly tired and overheated, I reached the summit, an elevation of 9,000 feet. Again I was disappointed.

It was warm, the hotel rates were as high as the altitude, and no snow and ice. I wanted snow and ice, for that was inseparably linked with my ideal of the Alps. Of course the panorama of the distant snow-clad peaks was beautiful, but I was disappointed, and like the King of France, I marched down hill again.

From Lucerne, by way of Giessbach, we went to Grindlewald, but upon our arrival found the town in ruins and our hotel in ashes. Thankful for this delivery, we journeyed on to Interlaken. This is a beautiful little spot, and from the hotel window I could see, far off in the distance, a majestic mountain, rising almost three miles above the earth, clad in a snowy garment, stately, inspiring, serene—the queen of the Alps—the Jungfrau. The name translated is The Maiden, derived, as the guide told me, from the fact that the first person to reach the summit was a maiden. This, no doubt, is one of the sweet stories which the natives love to hurl at travelers, hence I said nothing. The mountain probably received its name from the appearance of being clothed in an immaculate garb of white.

Animated with the thought that at last I had the opportunity to see snow and ice, I summoned two guides to the hotel to arrange for the ascent of the Jungfrau. The first thing we fixed was the price—100 francs each; then provisions for a week, in case we should be snow-bound. The knapsacks contained the following: Eight bottles of wine, two bottles of Cognac, one box of tongue, one smoked tongue, four chickens, eight loaves of bread, sugar, tea, canned soup and candles.

The next thing was to prepare the shoes with double soles and heavy spikes, put on double sets of underwear, purchase smoked spectacles and mountain picks.

I went to the corner of the street and purchased my pick. The good old woman asked me if I really was to ascend the Jungfrau. I replied in the affirmative and as I left the establishment I heard the murmur, "God bless you." And many a time during the ascent on the night of August 19, 1892, I heard the echo, "God bless you."

Meanwhile the hotel and neighborhood were in commotion. The news of the attempt to climb the Jungfrau had spread like all news and I found myself famous at a bound—but only that morbid fame which is born of idle curiosity. Agitated by a sense of foreboding, I gave instructions as to searching parties in the event of some accident, and then declared myself ready for the ordeal.

Two gentlemen, who for convenience I will name Moss and Henderson, asked to join the party, and after much persuasion and with a great deal of reluctance, the guides consented. Henderson was a young cadet from West Point and Moss a middle-aged man. Finally the carriage arrived, and at 3.30 in the afternoon, amid cheers and waving of handkerchiefs, we started out, mindful that perhaps we might never return.

We followed the course of the rushing, roaring mountain torrent fed by the melted snows of the Jungfrau glacier, tracing the road amid wild and rugged scenery till we entered the Lauterbrunnen valley—by far the finest I had yet seen. It lies between two walls of a mountain, which are so perpendicular and regular as if at some period of the earth's existence the rock had been cleft and separated, forming the valley.

Numerous waterfalls were to be seen everywhere, some shooting their waters out of the side of the rock—Trummelbach—as if from a catapult, others tumultuously splashing down in many cascades, while further on a thin sheet of white majestically falls from a distance of almost a thousand feet. This last, the Staubbach or Dust Brook, is a narrow column of water, which in the long uninterrupted descent is separated into fine spray—hence the name.

At six p. m. we reached Stechelberg, and discharging our vehicle, began the ascent. I soon learned that a mountain is not simply cone shaped, but is many miles in width and length and composed of many smaller mountains, And so, after attaining the summit of one hill we find a much larger one looming up before us, perhaps a mile or two away.

We followed a well defined mountain path, saluting the few peasants as they passed us and at dusk (about 7.30 p. m.), reached the small hut of a shepherd. In the distance I heard the echoes of an Alpine horn, and soon the yodling of a mountaineer struck my ear. The sound was a quaint one and how romantic it all seemed to be in the very midst of reality.

Finally the old keeper came into view and he bade us enter. The hut was primitive. The room (and it consisted of but one room) contained a bed, a table and two benches. And that was all. A lamp was suspended from the ceiling, and a small watch hung on the wall. The window panes were small, five by seven inches, but everything was scrupulously clean and scrubbed till the surface had become absolutely smooth.

We asked for something to eat and the old man brought in a bowl of warm goat's milk and potatoes. Each man received a scoop, and seated around the small table we all scooped our shares from the bowl. It was primitive, but good. The old man supplied us with fire wood, and bidding him good-bye we departed.

It was now quite dark and the atmosphere chilly. I turned up my coat collar and in silence we trudged on, each one possibly musing upon what was in store for him. Suddenly came a change. Vegetation disappeared, and we now traveled over huge boulders and jagged rocks. The guides had lighted the lanterns, the ropes were tied around us, and the difficult work began. It was pitch dark and nothing was to be seen beyond the small circle of light cast by the lanterns, but the guides knew the way indicated by crosses of red paint on the rocks. Ordinary traveling was long ago abandoned — we were pushed or pulled, crawled on hands and knees, were suspended by the ropes or gingerly crawled along narrow ledges no more than six inches in width, whereas a single false step meant death in the chasm below. Little did I dream that I was walking along the side of a precipice, with an abyss yawning thousands of feet below me. Little did I think that the shrewd guides had taken us at night so that we could not perceive the dangers through which we had to pass or eventually turn back.

We advanced with difficulty. The air was biting and chilled to the marrow and every ten minutes the guides halted to administer stimulants; but so great was our fatigue that the draught was assimilated immediately, without leaving any apparent effect. Moss breathed with difficulty and hardly could keep on. The guides told us that at an elevation of 10,000 feet was a small refuge hut built for the protection of travelers lost in storms, and that we would reach it at eleven o'clock. Buoyed by this hope, we gathered our remaining strength and kept at the exhausting climb. Eleven o'clock, and no hut. Immense rocks loomed before us which seemed insurmountable, but with difficully we reached the top, only to find other and larger ones rolling away in the background. Moss groaned and refused to go on.

By the time we had reached the snow belt, Moss, emanciated and in anguish, could not continue, but we finally persuaded him to hold to the end of the pick, the guides pulling while I pushed. Our progress was tedious and slow. "Are we near the hut!" asked Moss, the picture of despair. "In ten minutes," was the reply. The wind grew louder, the air colder. Fifteen minutes passed, half an hour. "Are we there now?" "Just a stone's throw," was the reply. Again we plied on our laborious crawl, holding on to the ledges lest we topple over, or sprawling on our stomachs, while the guide above pulled us up by the arms.

Suddenly Moss dropped and gasped for breath. He was the picture of resigned misery. "Boys," he said, "leave me here to die; good-bye." I rushed to a spot where I heard water trickling and gave him a draught of the cold liquid and a drink of cognac. "The hut is just ahead," said the guide, but alas! we had reached a high snowbank and nothing remained for us to do but to dig footsteps with our picks and pull ourselves up. We should have reached the hut at eleven o'clock and it was now one a. m. It seemed to me as if night never would end.

Finally we reached the top of the snowbank—"the hut! the hut!" shouted the guides, and we gave a loud cry of delight. Hope gave us new life. The guides told me the hut contained nothing but a little straw, a small stove and a few tin cups and plates. At last our haven of shelter loomed out of the darkness. We rushed for it, and—found the door locked! What did this mean? We pounded and a voice answered, the door opened, and I fell prostrate in a swoon!

I rememberd nothing more until I realized that one of the guides knelt over me trying to make me partake of some hot pea soup he had just prepared. My body shook with chills. I was covered with straw and overcoats, and soon a heavy perspiration told me the crisis was past. But the anguish of mind as I thought of pneumonia and of a possible death, and of the beloved ones at home! I fell into a profound slumber and awoke at about five o'clock in the morning.

It was then that I learned that the inhabitant of the hut was a Scotchman who had journeyed from Grindlewald and was now in the hut three days awaiting a favorable opportunity to reach the summit, 4,000 feet above. When I told him Grindlewald was burned to the ground, he turned ghastly pale, for here he was, far up on a mountain peak, away from home, amidst strangers, and without money or clothes, for everything had been burned in the hotel. My pity went out for the poor fellow.

Lifting the latch, I went outside to get my first glimpse from the high altitude. A gust of wind banged the door and I retreated. Carefully emerging, I clung to the side of the hut, lest I be blown away, and gazed about me. I was stupefied. As far as the eye could reach nothing but huge, irregular masses of ice and snow piled up in immense mountains, some split with deep ravines forming valleys and gulches of snow. Above me rose the peak of the Jungfrau, 4,000 feet from where I stood, and I longed to reach the top. It is a human failing to try to reach high altitude, even if nothing substantial is gained thereby. Consequently I asked the guides to take me up, but they refused, saying the wind was too strong and that a snow storm was coming on. But I insisted and finally won their consent, Moss and Henderson remaining in the hut.

We tied our trousers at the ankles, the coats at the wrists, put on double overcoats, tied our caps to the head, and with ropes around our bodies and with our picks, we began to climb. The wind was so strong that I was continually thrown off my feet, but the guides saved me. Small pieces of disintegrated rock were blown through the air, and I thought perhaps this small stone might be the cause of a destructive avalanche.

Finally we reached a crag which seemed insurmountable. One guide got up and by the aid of the rope I was hoisted up. The wind was furious, but securing protection under a ledge, I sat down at an elevation of 14,000 feet, and looked about me. The sight was awe-inspiring. Beyond, and miles and miles away, loomed up one peak after another, all clothed in the light of the sun which rose behind me, and piercing through the clouds which hung sullenly over the valley 4,000 feet below where I sat. It was truly stupendous. If anything is calculated to demonstrate the insignificance of man despite his boastful vanity, it is to be perched on a mountain top, at the mercy of the wind and storms, three miles above the surface of the earth, shut out by the clouds and with his whereabouts unknown. How one gust of wind can blow him to destruction, to a fate never to be known. How weak after all is man! How nearer it brings him to the Creator.

The winds blowing up the mountain side lifted the clouds which hung over the valley and from above it appeared like steam arising from a cauldron. The mighty chain of snow clad peaks rose before me imposing and almost incomprehensible, each one seemingly vieing with its neighbor for supremacy. The snow glistening in the sunlight enhanced the beautiful spectacle and I was lost in thought. The guide aroused me from my revery by an admonition that a storm was coming on, and hardly had he spoken when heavy banks of clouds obscured the sun and large flakes began to fall, carried hither and thither by the angry winds. Nothing could be seen, and for the first time I realized the deep meaning of being lost in a snow storm. The blinding storm raged for some time, but luckily for us shelter was provided by a huge overhanging crag until the severity abated. In a few hours we returned to the hut, and Moss and Henderson having regained their vigor, the descent began, and we finally reached Interlaken, where we were received with every demonstration of welcome.

ON THE PREPARATION OF WATER FREE FROM AMMONIA.

By Joseph Barnes, F. I. C.

The preparation of water free from ammonia, either by fractional distillation or by the process of long boiling with carbonate of soda is always a somewhat tedious operation. The well-known destructive action of the halogens chlorine and bromine on ammonia does not appear to have been made use of for ridding distilled water of this impurity. These agents however, afford us a means of preparing water absolutely free from ammonia in a very simple and expeditous manner. If a small quantity of bromine is added to ordinary distilled water and the latter boiled for a few minutes, all traces of ammonia will be destroyed. The same result is obtained by allowing the action to go on for several hours in the cold.

Much more rapid however is the action an alkaline hypobromite, which will destroy every trace of ammonia in the space of a few minutes in the cold. Water which has been treated either with bromine or a hypobromite cannot be used for Nesslerising purposes until all remaining traces of these reagents have been removed or destroyed, otherwise there will be a destruction of ammonia in the standard solution used for comparison; potassium iodide effectually serves this purpose, and the method resolves itself into the following simple operations:

One or two litres of ordinary distilled water are placed in a stoppered bottle anda little bromine vapour is then poured into it. After shaking, the water should be perceptibly tinted and should give a blue coloration when dropped on iodide and starch paper. One drop of a strong solution of caustic soda is now added and the bottle again shaken and placed on one side for ten minutes. Finally one or two drops of a solution of potassium iodide are added, and the water will then be found to be free from ammonia and suitable for Nesslerising purposes.—*Jour. S. C. I.*

INSECTS ATTACKING DRUGS.

By Prof. L. E. Sayre.

Some three years ago certain members of our Association* asked me to take up the subject of insects injurious to drugs, and for two consecutive years I have read papers upon it, presenting the names and descriptions, with illustration, of the various insects found upon drugs obtained not only from the store room of the Pharmacy School, but drugs obtained from different sections of the country. It may be said that during this investigation drugs infested with insects were, at my request, sent to me from all parts of the United States. A synopsis of this work was published in the American Journal of Pharmacy, Vol. xxiii, pp. 321-329.

The Secretary of this Association asked me to continue this subject and make a report giving any additional information which might be obtained from further investigation. Acting upon this suggestion, considerable time was set apart from regular work for the purpose of examining the drugs of the store room. Each individual drug was taken from its container and various particles were closely examined by the aid of the lens to ascertain whether any insects or larvæ were secreting themselves in the tissues. The drugs examined were those kept in rather loose containers for the practical purposes of the microscopical and pharmaceutical laboratories. Those drugs kept in glass cases and in glass containers, which are used for the especial purpose of lecture illustration, were not examined. The result of the examination may be stated briefly by giving, first, a list of the drugs infested and the insects found upon them, and second, a list of the drugs upon which no insects were found.†

Insects found in Different Drugs:

Lasioderma serricorne, in:
Aurantii dulcis cortex; bryonia.

Sitrodrepa panicea, in:
Aconitum; aspidium; coriander; semen fœniculi; ipecacuanha; triticum.

Bruchidæ, one species (one specimen), in:
Coriander.

Lathridius filiformis, in:
Absinthium; asclepias; aspidium, belladonna folia; belladonna radix; bryonia; ergota; limonis cortex; ulmus; zingiber, (unlimed.)

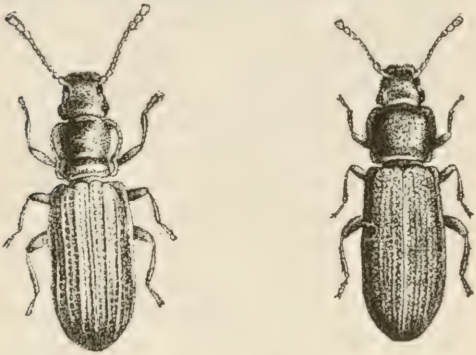
A species of coleoptera "probably exotic and not yet recognized by any specific name in this country." (L. O. Howard), in:
Absinthium; althæa; apocynum; arnicæ radix; asclepias; aspidosperma; aurantii amara cortex; aurantii dulcis cortex; belladonna folia; belladonna radix; bryonia; buchu (long); colocynthis; cypripedium; dulcamara; eriodictyon; ergota; eucalyptus; euonymus; glycyrrhiza; humulus; hydrastis; jalapa; lappa; pepo; podophyllum; phytolaccæ radix; quillaja; sassafras medulla; triticum; ulmus; zingiber (unlimed.)

Those who have familiarized themselves with the previous work upon this subject will see that there are here mentioned two, if not three, new species, namely, lathridius filiformis (Fig. 2), an insect resembling this very much, but differing from it somewhat (as seen in Fig. 1), and a species of unnamed coleoptera. Numbers 1 and 2, named by L. O. Howard as lathridius filiformis, appear to differ in the structure of the elytra and the form of the thorax. Of No.

---

*Read at the May meeting of the Kansas Pharmaceutical Association.

1 were found only two specimens, one in ulmus and another in zingiber, (unlimed).



Figs. 1 and 2. Lathridius filiformis, Gyll., (x 30.)

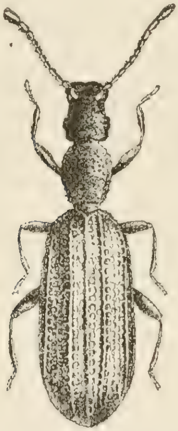


Fig. 3. An unnamed Coleoptera, probably exotic (x. 30)

No. 3 represents a species of coleoptera, "probably exotic and not yet recognized by any specific name in this country." "So far as we know," says Mr. Howard, referring also to lathridius, "these little beetles, feed for the most part, upon minute fungi or moulds which accumulate upon vegetable matter in damp places like cellars, and it is not probable that they are the primary authors of the damage to drugs or herbs kept in store." This statement by Mr. Howard corresponds with experience, as the drugs before mentioned have been kept in a comparatively damp place. During the summer vacation and in the fall before the steam was turned on the building, a considerable amount of fungoid growths had accumulated in the vicinity in which the drugs were kept. Many of the drugs had become so injured by fungus growths as to be utterly useless.

The most abundant pest in the crude drug stock appears to be sitrodrepa panicea (fig. 4), belonging to the family ptinidæ, a family whose members in both larval and adult stages feed on dead, dry vegetable and animal matter. This family comprises a number of small beetles rarely exceeding a quarter of an inch in length and usually brownish in color. A prominent characteristic is the hood-like pro-thorax, the head being so bent or drawn back under it as to be almost concealed (fig. 4 b). The individuals classified under the specific name of panicea are most abundant in this family. They are from two to three millimeters long, with the brown sub-cylindrical body almost entirely covered with many fine, short, yellowish hairs, which on the surface of the body, are arranged in parallel longitudinal lines; the upper surface of the body, the wing covers, is finely striated (see fig. 4, a). The young or larva of this beetle is a small white grub with three pairs of of legs and strong, dark brown jaws. The grub when lying at rest usually assumes a semicircular position (see c, fig. 4). They feed voraciously upon drugs and pass from the grub to the beetle very rapidly. The beetle feeds upon the drug by means of strong, biting jaws. The whole life of the insect is passed in the can or container of the drug. It is almost omniverous and has been found regaling itself upon colombo, aconite, mustard, belladonna, pokeroot, angelica, ginseng, etc.

Remedies:—In fighting insects which infest drug tissues, it is needless to say that those means employed by entomologists, consisting of arsenical sprays, etc., are out of the question. It is possible, however, to use a treatment which is practicable, namely the treatment of the drug with the vapor of carbon bisulphide.

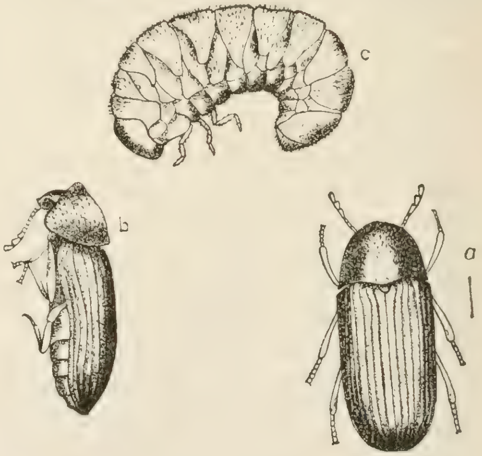


Fig. 4. Sitrodrepa panicea, Linne. a, Dorsal view; b. side view; c. larva.

This vapor is deadly to insects in all stages, except the egg stage. If the infested drug be placed in a tight vessel, after removing the dust and debris caused by the attack of the insects, and a quantity of bisulphide of carbon, sufficient to charge the vessel with vapor, introduced, any insects in the vessel will be killed.

The Pharmacopœia, in speaking of the preservation of ergot, says: "It should be preserved in a close vessel and a few drops of chloroform should be dropped upon it from time to time to prevent the development of insects." I should say that chloroform probably ranks next to carbon bisulphide as an insecticide for this purpose.

This paper would not be complete without recording the list of those drugs which were not attacked by insects—drugs exposed to exactly the same conditions. Those in the following list were kept in the same room and in the same kind of containers, and exposed to precisely the same atmospheric conditions as those mentioned in the preceeding list.

No insects were noticed in:

Acacia.
Aloe.
Ammoniacum.
Anisi semen.
Anthemis.
Asafœtida.
Benzoin.
Calamus.
Calendula.
Calumba.
Cannabis indica.
Cambogia.
Camphora.
Capsicum.
Cardamomi semen.
Carum.
Caryophyllus.
Cascarilla.
Cassia fistula.
Catechu.
Caulophyllum.
Chenopodium.
Chondrus.
Chimaphila.
Chelidonium.
Chirata.
Cinchona rubra.
Cimicifuga.
Cinnamomum zeylanicum.
Cinnamomum cassia.
Coca.
Coccus.
Colchici semen.
Colchici radix.
Convallaria.
Crocus.
Cusso.
Cubeba.
Digitalis.
Elastica.
Eupatorium.
Frangula.
Galla.
Gelsemium.
Gentiana.
Geranium.
Gossypii radicis cortex.
Grindelia.
Granatum radicis cortex.
Guaiaci lignum.
Guaiaci resina.
Guarana.
Hamamelis.
Hæmatoxylon.
Hedeoma.
Ichthyocolla.
Illicium.
Inula.
Iris.
Juglans.
Kamala.
Kino.
Krameria.
Lactucarium.
Leptandra.
Linum.
Lobelia.
Lupulinum.
Macis.
Manna.
Marrubium.
Matico.
Mastiche.
Matricaria.
Melissa.
Menispermum.
Mentha piperita.
Mentha viridis.
Mezereum.
Myristica.
Myrrha.
Nux vomica.
Physostigma.
Phytolaccæ fructus.
Pimenta.
Pulsatilla.
Oleum theobromatis.
Opium.
Pareira.
Pilocarpus.
Piper.
Pix burgundica.
Prunus virginiana.
Pyrethrum.
Quassia.
Quercus alba.
Resina.
Rhamnus purshiana.
Rhus glabra.
Rhus toxicodendron.
Rheum.
Rosa gallica.
Rosa centifolia.
Rubus.
Rumex.
Salvia.
Sabina.
Sambucus.
Sanguinaria.
Santalum rubrum.
Santonica.
Sarsaparilla.
Sassafras.
Scammonium.
Scilla.
Scoparius.
Scutellaria.
Senna.
Senega.
Serpentaria.
Sinapis alba.
Sinapis nigra.
Spigelia.
Staphisagria.
Strophanthus.
Stramonii folia.
Stramonii semen.
Tamarindus.
Taraxacum.
Tanacetum.
Terebinthina.
Tragacantha.
Uva ursi.
Valeriana.
Vanilla.
Veratrum viride.
Viburnum prunifolium.
Viburnum opulus.
Xanthoxylum.
Zea.
Zingiber, limed; unlimed badly infested.

—*Druggists' Circular.*

* * *

THE alkaloid of *Calycanthus glancus* has been discovered and first extracted by Dr. Eccles of Brooklyn, he has obtained it in crystals which from their high refractive power sparkle like diamonds. Dr. Eccles exhibited some of these when reading his paper, announcing the discovery, at the April meeting of the New York Section of the American Chemical Society. This alkaloid has the highest refractory power of any known organic substance. A nitroso-compound of calycanthine is thalleiocanthine; this forms dark colored salts that in dilute solution are a brilliant green. No therapeutic application of the alkaloids has yet been announced.

THE EDUCATION OF CHEMISTS.

By C. Duisberg of Elberfeld.

In response to an invitation of the Chairman of the New York Section of the Society of Chemical Industry, I have, with great pleasure, undertaken to read a paper in your society, for I thus obtain an opportunity, as a visitor to your hospitable shores, to thank you for all the interesting and impressive matters in trade and traffic that have been brought under my notice during my short stay.

I do not wish to leave America, replete with new impressions and experiences which I have gathered here without showing you, be it in a small way, my gratitude for the hospitality which has been offered me in such abundance.

The Chemical Industry of America is in the infancy of its development. It has not reached that height of perfection which we observe in England, France, and above all, in my own country, Germany, and what is wanted here principally is the organic chemical industry, which in Germany is so highly developed. The foundation however for the industry of the coal-tar distillation products has been laid here in powerful inorganic industry, and the time cannot be far off when we shall have to deal with American competition in the organic chemical field, in the same way as is already the case with some organic special products, as wood-alcohol, acetic acid, aceton, etc.

It would appear incomprehensible from a national standpoint if I, interested as I am in German industry, should attempt to exert my influence for the promotion of the chemical industry in America. This, as you will readily understand, I cannot do, and for that reason I regret that I am not in the position to give you to-day a special report on one of the chemical, technical fields of my knowledge. Since, however, the first condition for the growth and development of each industry is the education of capable men, who can subsequently develop it properly, since before all the chemical industry, in which strange languages and ways of expression hold sway, can only advance from step to step, if clever well-educated chemists can be found, and since chemistry as an international science is not confined by frontiers of countries and peoples—the chemical industry of America can obtain capable Germans and the German industry capable American chemists and engineers—I can, without damaging our interests or those of our country, explain to you, as representatives of the chemical industry of the United States, my experience in the education of chemists.

I trust therefore that it will interest you to hear on this also here much ventilated question the voice of a co-operator from that country, in which, I am proud to say, the education of chemists and technical chemistry has reached the highest points of development.

I have at my command rich experience regarding the value of the education of chemists in all its branches, for I am technical manager of one of the largest chemical manufactories in Germany, the Farbenfabriken, vormals Friedr. Bayer & Co. of Elberfeld, or rather of Leverkusen near Cologne, wither now the whole works are being transferred in order to reduce expenses and to attain a cheaper way of manufacturing. We not only try to make use of all the derivatives of the tar from wood and coal for the production of Aniline and Alizarine Dyestuffs of all possible descriptions, and also pharmaceutical products of the most divers combinations such as Phenacetine, Sulphonal, Trional, Salicylic Acid, Somatose, (a new alimentary product) Saccharine, etc., but we produce also the inorganic products necessary for their manufacture, as for instance Sulphuric Acid, Hydrochloric Acid, Nitric Acid, Chlorine, etc., and a large number of intermediate organic products.

In our works are engaged at present about 100 chemists that have a university education, and about 25 engineers that have received their training at a technical high school. They are recruited from almost all the universities and technical high schools of Germany, and the greatest number have been engaged by me personally during the last ten years.

As member of the Commission, formed last year by the German Society of Applied Chemistry for the introduction of a States examination for German technical chemists, I have often had the opportunity to exchange intimate thoughts regarding the education of chemists with numerous professors of the German universities and and high schools, and also with a great number of gentlemen interested in chemical industry. I had a statistical table compiled concerning the present education of chemists employed in the German chemical manufactories, of which I shall give you the numbers later on.

No industry is so closely allied to science as the chemical industry, in which, it is true, one can arrive at a snail's pace to new results without the use of scientific means, but in which definite results can only be obtained when the active powers therein are in close relation with the science, or, better still, when they are authorities on the special field they have chosen for their labors He that in technical chemistry relies without scientific support on empiricism, is like the blind who can grope his way along known thoroughfares but cannot advance on unknown roads, and if he should succeed after innumerable difficulties, passes along without noticing the points of interest.

The technical chemist makes use, in the first place, of chemical reactions, in which the individual developments are not visible, but take their course in secret. The machinery and apparatus which we need serve only as assistants to bring the chemical reactions to perfect activity. They are only means to an end. Chemical reactions cannot be compared to an engine, in which every action is shown by the movement of the wheels, in which any irregularity is immediately visible, and can be observed at once by the engineer. In technical chemistry the sharp eye of a trained man is wanted, trained through science, in theory and practice, in order to recognize the individual developments of a reaction that is in course of progress, and will not be seen directly, but only through the accompanying symptoms. That is the reason why in technical chemistry we do not observe an advance from good to better unless the best and strongest powers exert the whole of their knowledge and will. We technical chemists find, even in the most simple chemical reactions, the most remarkable complications, the removal of which can only be accomplished in a prompt and sure manner by a chemist who is intimately accquainted with all the details of his science. So, for instance, it is generally thought that the production of an Azo color is technically the most simple thing imaginable. One requires only to mix a certain quantity of a Diazo compound with a certain quantity of an Amio or a Phenol, and the formation of the Azo Dye takes place at once without any further trouble, in a perfect quantitative manner. Far from it. Certainly, if one mixes the right components one can obtain a Dye stuff, but since the struggle for life demands that pure products in quantitative yield shall be produced, it requires the concentrated work of chemical research to determine all the details of the conditions that bring about the combination. In this case the manner and form of the Diazo compound, the manner and quantity of the solvent, the temperature and rapidity with which the two bodies come together and become chemically combined, and the purity of the two components are of the greatest importance. In the color industry, even at the present time, in the manufacture of the simplest colors, the most important results are matured by constant observation, experimenting and control during the process of fabrication.

In the other branches of chemistry the same conditions prevail. As an instance, I may cite the manufacture of Sulphuric acid anhydrid, the fuming Sulphuric acid, for, although the method of producing this chemical substance has been know for years, it has been possible by constant observation and experimenting to perfect the manufacture, so, that the formerly expensive product is now sold at a price never before thought of. Ten years ago it cost about twenty times as much as concentrated Sulphuric Acid, but now it is so cheap that a Sulphuric Acid of high per centage can be made by mixing the weak acid with Sulphuric Acid, anhydrid.

It is scarcely necessary to point out that for such an industry the education of its operators is one of the greatest importance.

Chemistry, as a science as well as an industry, is like electrotechnics, a child of the nineteenth century. Technical chemistry, with its powerful influence on public life, only dates from the middle of this century, and it has started on its course of victory even much later. It is therefore clear that the proprietors of chemical works, the representatives of chemical industry, are often not convinced of the necessity of employing in their works, men thoroughly well trained in general scientific education. The consequences will, however, teach that all those who occupy the old standpoint, and allow their chemists only a consultative branch in their laboratories, who do not confide to them the secrets of their business, but leave this to practically trained technical men, or even to their laborers, must go back, or at least remain on the same spot, whilst others who take advantage of the above lessons, go forward. Nowhere, in any other field, is the saying, "inactivity is retrogression," so applicable as in the chemical field, where constantly every new invention annihilates the older, and where not only technics, but especially science go forward in so quick a manner. Not only technical chemistry however, but also the other fields of practical chemistry, such as alimentary chemistry and analytical chemistry, require the best chemically educated powers in order to solve all problems quickly and exactly. This is especially important in all legal difficulties, where the opinion of a technical chemist, an expert, is required. In these cases the judge has to rely upon what the expert places before him, because chemistry as a science as well as in application is too peculiar for the logically trained law student to penetrate thoroughly into the matter.

A nation that will not stand back in the race of peoples, must therefore show the greatest attention to the training of chemists. It is, in the first place, its duty to take care that capable representatives and prominent teachers of this science are at hand, who introduce the pupils into the at present already so large and difficult field of chemistry. They must show them the way to the highest regions of chemical knowledge, and teach them to be capable representatives of applied chemistry, and especially of technical chemistry.

How many young men lose their way in this respect, and never reach the aim of their ambition. They do not become useful supports of their profession, as might have been the case had they had the proper education, simply because they did not prepare themselves in the proper way for their profession, or because they were often shown the wrong way.

The question is, how is it possible, according to our present ideas, to complete the education of a chemist, apart from the special field, which later on he may make his own, whether he will devote himself to a scientific career, or whether he will become a technical expert, or an alimentary chemist?

I share the opinion with the majority of university professors and of manufacturers, that, for the study of chemistry and a proper understanding of chemical science, in the first place, a thorough schooling, a general all-embracing education is required. The reproach often made to young chemists, which is not unjustified, is, that they are too one-sided, and that, before they have mastered sufficient general knowledge they devote themselves to a special branch. It is, of course, not impossible to become a capable chemist without going through the usual schools, as has been shown by numerous living examples. This was especially feasible in olden times when our science was still in its infancy, but now it is different. The almost incomprehensible stride that chemistry has made of late years and the necessity for the right understanding of its actions on other sciences, like mathematics and physics, and above all the other sciences, that go hand in hand with chemistry, such as physiology, pharmacology, etc., and which contribute to the attainment of the best results, necessitate absolutely a larger, more general and extensive preparatory education. When the youth, after having gone through the best school, where he has acquired a good general education, such as mathematics, natural philosophy, languages, literature, etc., goes to the university, he commits the greatest blunder if he devotes himself immediately to chemical study to the exclusion of other sciences. Even now he must keep himself informed of the general scientific progress at the university. Next to chemistry he must study theoretical and practical physics in order to understand the principles of physical chemistry. To that he must add mineralogy and crystallography, so that he may learn to master inorganic chemistry, and train himself to understand the relation of substances to space. He should also know the foundation of botany and zoology, to be able to follow the development of the organic life. His principal occupation must of course be theoretical and practical chemistry.

Chemical Technology must demand from every practical chemist a perfect knowledge of analytical chemistry, because it produces the best results, and is even of the most importance in organic technical chemistry. The young chemist therefore must perfect himself in quantitative and qualitative analysis, without neglecting his practical chemical work, and prepare himself for the field of inorganic chemistry. Inorganic chemistry is scientifically and technically the foundation of the whole building of chemistry, and if the foundation is weak the whole edifice will suffer. For this reason practical inorganic study is the necessary beginning for all special chemical work. Once let the chemist be thoroughly acquainted both theoretically and practically with inorganic chemistry, when he has mastered analytical chemistry and when he is at home in the associated sciences, such as physics, mineralogy, etc., he can safely return to organic chemistry. Here the centre of gravity is in preparatory work. The student of organic chemistry must make himself acquainted with all important methods from one, or better still, several examples, which he learns from the great chemical classics. Here the young chemist often makes a mistake, for he allows himself to be tied down to a special field, in order to assist his professor scientifically, before he has acquired an exact knowledge of organic chemical methods. We organic experts, as is well known, put the greatest value on this, that after a student has learned chemistry theoretically and practically, he shall acquire the ability of independently working in scientific fields, so that he may learn to find the way in unknown, unexplored chemical fields. The teacher must only assist, must keep the student from going astray and must not interfere by his own action with the independence of the student's work. This is the best preparation for his profession as a technical chemist, because later he will have to rely upon himself alone in the research of chemical developments, as also principally the invention of new technical methods or new technical valuable products. The chemist however, should not work independently until he has mastered the methods, and when he does so, he must avoid such work as is only imitation of what others have done before him.

In theoretical chemistry, the chemist should be thoroughly acquainted with chemical reactions, which form the basis of analytical methods, so that he can meet all the difficulties of technical analysis. Althought analysis in inorganic chemistry has been much perfected it still leaves much to be desired in technical questions, and is entirely deficient in organic chemical industry. The young chemist must therefore learn also to find new analytical methods, so that in technical practice he can himself find the proper analysis, if they should not be known. But above all, he should be thoroughly acquainted with the chemical reactions that take place in the operation of technical chemical industry. I am an enemy to all specialization at universities, in whichever direction it may be, for the young chemist when he begins his study does not know to what branch he will finally devote himself, whether to inorganic industry, alimentary chemistry, electro chemistry, pharmaceutical chemistry, the technic of preparing inorganic and organic products, color chemistry, fermentation chemistry, agricultural chemistry, or any other branch of applied chemistry. It almost always depends upon accident, in which special field the chemist will find his career. For that reason we do not wish that the chemical technologist be taught in such a manner, as is often the case that the smallest detail of the apparatus is taken into account, and all the tricks that are wanted in some technical work are explained. We only wish that chemical technological sciences explain to the student practical inorganic and organic syntheses for which they are, as for instance, color-technology, remarkably well adapted. We wish of course, that the technical chemist should be acquainted with the great processes such as Le Blanc, Solway, Deacon, Weldon, etc., but only in large outlines, not in apparative details. Nor should he neglect physical chemistry, especially electrical chemistry. In the laboratory of all universities the young chemist should find electro-chemical appliances, not in special apartments, but in different places in the general working room so that every student be in the position to produce inorganic and organic preparations by electrochemistry. The young chemist must learn to handle electric currents and the principles of electrolysis. He will thus be placed in the position, if his way should lead him to the electrochemical field, to easily master that science. In Germany the chemist generally finishes his studies with his promotion based on his performance of a chemical experimental research, and after passing a verbal examination in the general field ot chemistry and in physics and mineralogic or another associate science. He then obtains the title of Doctor of Philosophy or of Doctor Rerum Naturalium. Since this examination can be passed in Germany only at the university and not at the technical high schools that also serve for the education of chemists, although in the more technical direction the students of the technical high schools finish their studies generally by passing the so-called "diploma examination." The young chemist is now ready to go into practice wherever a suitable situation offers itself and it will be easy for him to perfect himself in any special branch by studying the literature on that subject. If however, he should have the necessary means and should not compelled to work for his livelihood he would do well, although his university study has cost him from four to five years already, to become assistant at the laboratory of a high school. He will strengthen in that way that knowledge that has very often been superficially acquired for the examination and before all, and above all, he will exercise himself in independent practical laboratory work, but under the superintendance of the professor.

In our works in Elberfeld and Leverkusen, in which, for our special object, we choose almost exclusively young chemists from the high schools, we always give to those the preference who, after passing their examination, have worked one or two years with one of the professors, with whom we are associated. When such a chemist joins our service, we do not expect, if for instance he should enter the department of colors, that he should even know what a color is. We have found it most satisfactory, if we introduce the young chemist ourselves in our special field. For that purpose every chemist must first pass through our experimental dye and print labratory, in order that he may learn dyeing and printing, and becomes aware of the requirements of the dyers' industry, as regards dyeing properties and the fastness of colors. When he has finished this school, the chemist is introduced in the scientific laboratory. It is its duty to keep us and our chemists informed of everything new that appears in the field of our manufactures in literature, patents, etc., and it is at the same time principally the laboratory of inventions. In this our scientific laboratory alone at the present time more than 20 chemists are occupied. Here the young technical chemist must produce a few of the well-known dyestuffs of the greatest variety of groups. He must experiment with those colors of our competitors that we find in the market, and only then he will slowly and gradually be directed into one special branch of color chemistry. This scientific laboratory similar to the general staff of the army, serves at the same time to supply us with substitutes for the leading chemists for special departments in our works, where only such chemists who have shown their value in the scientific laboratory are admitted.

In the same manner as we form our chemists for the color department, we do it for other departments in our works, for the inorganic, pharmaceutical, analytical, etc., departments.

We do not expect striking results from any of the chemists, during the first year of their appointment. We only wish that he perfects himself as much as possible in the branch, that has been allotted to him and tries to master it. Capable, generally educated, active and especially energetic men become almost always in the course of their first contract, productive and give the service, that is expected from them.

I hear it said however, that chemical industry works with numerous machines and apparatus; innovations and improvements especially in the field of inorganic industry, have been produced only by alterations and new constructions of furnaces and machinery. It is not right therefore, that the chemist, especially the leader of a department, should be educated in construction, in the knowledge of machinery? Should he not be able to make drawings, and be capable, the same as an engineer, to construct the apparatus for his purpose? In many branches of chemical industry the knowledge of machinery may be necessary for the practical chemist, especially when the works are small and there are no engineers. In opposition to many of my friends, I place myself however on the standpoint, although I myself have acquired the technical knowledge that the chemist does not require this purely technical knowledge. Nothing according to my opinion is worse than to make of a chemist an *Ingenieur-chemiste*, as is done in France, or Chemical-Engineer, as is very often done in England. The field of chemistry, which the chemist has to master, is at the present so enormous, that it is practically impossible for him to sudy at the same time mechanics, which is the special field of the engineer. Division of labor is here absolutely necessary. I leave to the engineer his science, to the chemist, chemistry; but I desire that both work together. I deny decidedly that any one person can master at present both sciences and combine them in himself. The chemical-engineer is both half and nothing quite. That at least is my opinion and my impression. I could also state that a thoroughly well trained chemist, who had never heard not even the elements of mechanics, can find his way nevertheless very easily among the apparatus of chemical industry, most of which are simple, if he should be compelled to look after that part of his department. I personally prefer in questions of technical mechanics one capable engineer to a dozen chemists with a knowledge of mechanics. He however who places extra value on the knowledge of mechanics and desires that his chemist should be instructed in this part, should not be too exacting in that direction, but be satisfied with a knowledge of the elements of this science and take chemists, that, as is the case with us in Germany, have been educated not at the university, where those branches are not taught but at technical high schools where they must be learned during the first years.

In order to see now whether the chemical industry agrees in general with the principles here laid down, regarding the education of chemists, in order to test, if it participates in the standpoint thus marked out, that the knowledge of mechanics and construction is not required, I have issued statistical inquiries to 83 of the more important chemical works in Germany, in which more than one chemist is occupied. The result is the following: –

Of 633 chemists who find occupation in these 83 works, amongst which are 13 of inorganic industry, 14 which manufacture organic, intermediate products, 10 wood and coal-tar distilleries, and 9 tar-colors works, as also 10 works for the manufacture of pharmaceutical products and perfumeries, there were 70% that had passed their examination at a higher German school, as for instance the Gymnasium or other preparatory school, 45% that had received their education exclusively at the university, 17% exclusively at a technical high school, 35% both at the university and at the technical high school, so that when we divide the two last into equal parts, 65% had studied at universities and 35% at technical high schools. Of all these chemists, 68% had passed the doctor's examination, and only 15% the diploma examination of the technical high schools, whilst 15% had passed no examination whatever.

With reference to the different industrial branches I found, that the metlaurgical industry, the inorganic industry, the coal-tar distilleries, and also the blasting powder works, place those chemists, that had been educated exclusively at the technical high schools on the same level as university chemists, but do not, as has been often thought, prefer them.

The other works, especially those, that produce inorganic and organic products, the tar-colors, the pharmaceutical and perfumery works seem on the contrary to prefer the university chemists who know nothing about mechanics.

I am not sufficiently acquainted with the conditions of the United States to gauge them, but I am firmly convinced that the requirements, I have described for the education of chemists in Germany are also of application in this country and perhaps still more so than with us, considering that here the principle of division of labor it more accentuated and where also chemical industry is beginning to develop itself in various ways.

In a so highly developed industry as modern technical chemistry in which at present Chemists, Physical Experts, Physiologists, Physicians, Apothecaries, Engineers, Architects, and even Jurists, as is the case in our works in Elberfeld, are combined in one work, we can only expect good results by reasonable division of labor and combined action, when all are first rate powers, when above all the chemists, who of course form the majority, are energetic, active men, when every one in his special branch is an authority. This applies not only to Germany, it applies equally to all other countries.

Chemists that have to spend from five to six years for their education, naturally ask high salaries, and they are obliged to do this, but you will find that the capital so invested will soon produce good interest.

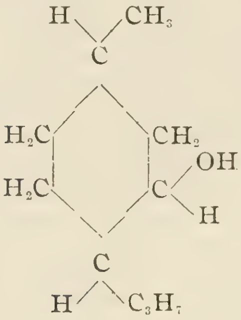
Although our great master and poet Goethe, says: "All theories are Grey, but the golden tree of life is Green," it is necessary in the chemical industry, that all who take part in it, study both theory and practice. The seeking of the Philosopher's Stone, occupies the modern chemists now just as much as it did in olden times our forefathers, the Alchimists, with this difference however, that the definition of what is meant by the Philosopher's Stone has been altered and is in the present time scarcely possible by empiricism. He only will find this Philosopher's Stone who satisfies for himself and his co-operators, the highest demands in reference to general and special, theoretical and practical education, activity and energy.—*Jour. Soc. Ch. Ind.*

TRANSFORMATIONS OF MENTHOL.

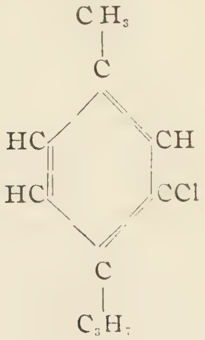
Beckman & Eichelberg (*Ber. d. Deutch. chem. Ges. 29. 418*) have succeeded in transforming menthol into thymol. They obtained by the action of 2 mols. of bromine upon 1 mol. of *l* or *d*—menthone a dibromide, C_{10}, H_{16}, Br_2, O; this shows the character of brominated ketone, as it is reduced to menthone by the action of zinc dust and glacial acetic acid ; it also forms a solid oxine (melting point 136-137°) with hydroxylamine. Upon heating this dibrom-menthone with chinoline to boiling, 2 mols. of hydrobromic acid are eliminated and upon acidulation of the remaining product, thymol is obtained by exhausting the fluid by shaking with ether.

This transformation of menthol into thymol furnishes an additional evidence for a correct definition of the constitution of menthol. It also explains the fact that menthol contains methyl and isopropyl in para-position and that the oxygen atom stands close to the isopropylic group.

Jünger and Klages (idem 314) have transformed menthone into 3-chlorcymene and have thereby furnished experimental evidence of the correctness of the menthol formula :—



They accomplish this in the following manner :— The oxygen atom of menthone was first displaced by Cl_2, the dichlorhexahydrocymene eliminates Cl H, leaving a tetrahydrochlorcymene ; from this are successively formed by the action of bromine and of chinoline 3-dihydrochlorcymene and finally 3-chlorcymene.



A customer at a down town store presented a four ounce bottle and called for five cents' worth of ammonia. The bottle bore the following labels :

Water of ammonia, J. N. Hegeman & Co., N. Y ; aq. ammonia, S. Choonmaker, N. Y.; spt. ammonia, Bigelow, N. Y.; liquid ammonia, Rome ; salmiakgrist, Zürich ; liquid ammonia, or spts. hartshorn, Edinburgh; salmiakgrist, Stutgart; salmiakspiritus, Trondhjen.

Proximate Analysis of Polygala Senega.—Schroeder has obtained 1.12 per cent. of volatile oil, 5.5 per cent. of fixed oil, 2.14 per cent. of an ether-soluble resin, 2.76 per cent. of glucose, 5.82 per cent. of saccharose, 5.98 per cent. of impure polygalic acid and resin, 1 95 per cent. of mucilage, 4.07 per cent. of a saponin containing extractive, 18.4 per cent. of pectin and albuminoids, and various minor proximate principles. The large proportion of albuminoid matter contained in senega root is probably intended to serve as a reserve food product for the plant. It contains neither starch nor inulin. *Triosteum Perfoliatum* tinker's weed has been found as an adulterant of senega.

Citronellal.—Tiemann and Schmidt publish an exhaustive account of the chemistry of the citronellal series, upon which they have been at work for some time. Citronellal, an aldehyde occuring in various ethereal oils (such as citronella, some varieties of eucalyptus, &c.), possesses the constitution—

$CH_3.C(CH_3): CH.CH_2\ CH_2.CH(CH_3).CH_2.COH.$

It is easy to obtain by recrystallization of the double sodium bi sulphite compound. It boils at 205°—206° and its specific gravity at 17.5° is .8538 ; rotary power $[a]d = 12°.30$; refractive index, 1.4481. Citronellic acid, prepared by oxidation of the aldehyde by moist silver oxide boils at 257°. The aldehyde is reduced by sodium and acetic acid to the corresponding alcohol, citronellol, a dextrorotary body. The authors consider that the alcohols of Turkish rose oil are only geraniol, and a second one, which they look upon as the optically active isomer of d-citronellol, and therefore term it l-citronellol. Spanish geranium oil contains geraniol and d- and l-citronellol, as does also African geranium oil. —*Berichte*.

THE Alumni Journal

Published Monthly under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. JULY, 1896. No. 7.

SUBSCRIPTION:

Per Annum,	**One Dollar**
Single Copies,	**15 Cents.**

All communications relating to subscriptions for the Journal, should be addressed to Nelson S. Kirk, 9 East 59th Street, New York City.

All communications intended for the Editor, original contributions, exchanges, books for review, etc., should be addressed to
Alfred H. Mason,
59 Maiden Lane,
New York City.

All communications relating to advertisements or to the business of the Journal, should be addressed to
Thomas M. Davies,
543 Third Avenue,
New York City.

All copy for publication, (written on one side of the paper only), or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

EDITOR PRO TEM.
ALFRED H. MASON, Ph. C., F. C. S.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

THE enthusiasm which induced about eighty ladies and gentlemen to visit Point View Island upon such a wet day as June 17th proved to be, should assure the most skeptical of the lively interest the members and their friends take in the welfare of the Alumni Association, and of their confidence in the Outing Committee.

E. F. LOHR, '93, and Maurice F. Schlesinger, have been elected members of the college.

YOUR attention is called to the advertisement on page vi., referring to the ALUMNI JOURNAL binder.

PROFESSOR C. F. CHANDLER, who has completely recovered from his recent illness, attended the June meeting of the Board of Trustees of the college and introduced the new President, Mr. Edward Kemp. He sailed for Europe on the steamship "La Touraine" on the 12th ult., and expects to stay in Paris until the 16th inst. when he goes to London to be present at the annual meeting of the Society of Chemical Industry. Professor Chandler is Chairman of the New York Section of the Society, succeeding Mr. A. H. Mason in that office. He expects to return about the end of September.

PROFESSOR SMITH ELY JELLIFFE, M. D., took the degree of Bachelor of Arts at the annual commencement of the Brooklyn Polytechnic Institute on the 16th ult.

WE have pleasure in presenting to our subscribers with this issue, a plate photo of the members of the first Post-Graduate Class of the College who took their degree of Doctor of Pharmacy, (Phar. D.) There is also an illustration of the Post-Graduate emblem.

COMMUNICATIONS are acknowledged from Geo. F. Burger, A. Gies, H. B. Ferguson, J. Pfeiffer, H. A. Herold, C. W. S., Julius Tannenbaum, Eugene F. Lohr, Nelson S. Kirk, George J. Dürr, J. Hostmann, B. R. Dauscha, W. A. Bastede and L. W. DeZeller. The editor invites contributions from members of the Alumni and others, consisting of original articles, abstracts or newsy and personal items. Such appointments as associate editors are an anomaly. He will be pleased to enroll a staff of *contributors* if those who are willing to assist him in this capacity will kindly send in their names. The official class reporters are of course regular contributors.

THE POST-GRADUATE EMBLEM.

The Post-Graduate Class of '96 have taken an important step and set an example which should be followed up by a representative committee of all graduates of the college.

Having selected an emblem to be known as the "post-graduate pin," they applied to the Board of Trustees in May for its special recognition. In response thereto a committee was named by President Fairchild to take the matter into consideration. This committee consisted of Messrs. Fairchild, Atwood, Macmahan, Gies and Ferguson.

The *official* post-graduate pin, therefore, has been deposited with the Secretary of the college as the authorized emblem for doctors of pharmacy to wear. An illustration is given in this number of the JOURNAL. It is made of half-round gold, firmly secured by a pin on the back, it represents simplicity, neatness and beauty, and the post-graduates are to be congratulated upon their selection and success in the matter.

It may be well to recall what has been done in this connection by the graduates in pharmacy. The selection of a college emblem has always led to large meetings of the students and animated discussions amongst those interested, and at times some strife has been shown. From time to time different designs have been submitted at such meetings for selection, and it is right that the students should have a voice in the matter, but, for want of organization, uniformity has not prevailed. The first pin to be widely known by common useage was that worn by Classes of '90, '91, '92, '93, '94, but the Class of '95 adopted a new design, causing a break in the chain. The Class of '96, however, wisely decided to restore the emblem which had been in use for five years.

The importance of a common understanding which could be so easily arrived at is such that the suggestion to form a representative committee to decide upon a permanent emblem for graduates in pharmacy of the College of Pharmacy of the City of New York must be welcome, and it is to be hoped that this will be acted upon and the same means taken to get its official recognition as has been so successfully accomplished by the doctors of pharmacy.

DOCTORS OF PHARMACY OF THE FIRST POST-GRADUATE CLASS OF THE C. P. C. N. Y.

CHARLES H. BJORKEVALL, PHAR.D., '96, was born in New York in 1874 and graduated from one of the New York City public schools. In 1893 he entered the College of Pharmacy of the City of New York as a student and graduated with the Class of '95. In '96 he graduated as Doctor of Pharmacy.

Popular alike with his fellow students and professors, he has many friends. He has the appearance of a typical athlete and will no doubt be heard from, his activity of mind and body being an incentive for further study and developments in the profession he has chosen.

Dr. Bjorkevall is a member of the C. P. C. N. Y.

HARRY B. FERGUSON, PHAR.D., '96, was born in 1875 at Little Falls, Herkimer Co., N. Y., and is a striking example of what diligent study and hard work can accomplish. At the age of fourteen years he entered the pharmacy of H. G. Babcock at Little Falls. In 1893 he became a student of the College of Pharmacy, and he gave such evidence of ability that he was invited to act as assistant to Prof. Rusby in the Junior pharmacognosy classes during the Senior year, at the end of which, on graduating in 1894, he secured the bronze medal of the Alumni Association. He was engaged by the Trustees of the college as assistant demonstrator in Junior pharmacy and pharmacognosy during 1895–1896. He took the highest honor in the post-graduate course when he obtained his degree as Doctor of Pharmacy, and was the first to receive the "Faculty Prize."

During the absence of Prof. Rusby he took charge of the Senior Class in materia medica, and is now one of the Faculty as instructor in materia medica, physiology, botany and pharmacognosy.

He fills a position in the crude drug department of Parke Davis & Co. whilst not engaged with his professional duties.

He is popular with the students, and was elected Vice-President of the Class of '95, also of the Post-Graduate Class of '96. All success and honor to such a distinguished graduate.

Dr. Ferguson is a member of the college and an active member of the Alumni Association.

RUDOLPH GIES, PHAR.D., '96,

was born in New York in 1871. When quite young he was placed in the hands of private tutors, and eventually entered upon the study of medicine, but pharmacy being more attractive, in 1887 he entered the pharmacy of T. E. Fraser. His services were so well appreciated that in 1893 he was appointed to the management of Mr. Fraser's pharmacy, 29th street and 8th avenue, New York. In 1893 Mr. Gies entered the C. P. C. N. Y., where he became a diligent and patriotic student, graduating in 1895. He was elected President of the first Post-Graduate Class and took his degree as Doctor of Pharmacy in '96.

Popular with professors and students, he is also an active worker in the Alumni Association, his musical ability and genial disposition having done much to promote the growing interest the members of that Association are evidencing. His fine presence and courteous manner, combined with his abilities as a pharmacist, are sure to bring success to him in the handsome pharmacy which he occupies at 28th street and 3d avenue.

Dr. Gies is a member of the C. P. C. N. Y.

GEORGE H. JORGENSEN, PHAR.D.,

was born at Berlin, Germany, in 1874. He came to this country when quite young, graduated from one the city public schools and eventually entered the pharmacy of A. Eich, where he remained five years. He became a student of the college in 1893, graduating most creditably in '95, and taking his degree of Doctor of Pharmacy in '96. Large in stature, jolly, bright and good natured, always a hard worker and close student, he will no doubt prove himself worthy of his Alma Mater and go through life as his college years have been spent, beloved by his classmates, friends and fellow men.

Dr. Jorgensen is a popular member of the Alumni Association and a member of the C. P. C. N. Y.

JOSEPH F. MCCARTHY, PHAR.D., '96,

born at Yonkers, N. Y., in 1874, was apprenticed to Mr. Selleck, Yonkers, and entered the college as a student in 1891, graduating with great credit in 1893. proving himself to be a close student and exceptionally clever pharmacist. He took his Degree of Doctor of Pharmacy in'96 and was considered by professors and students one of the best and most accurate workers in his class. He is employed by Mr. Walsh, who succeeded to the pharmacy of Mr. Mitchell, in whose service he was at the time of the transfer. Blessed with a sunny disposition and fine literary tastes, he is extremely popular with all who know him.

Dr. McCarthy is a member of the Alumni Association and of the C. P. C. N. Y.

CHRISTOPHER E. NIEDERER, JR., PHAR.D. '96.

Born at Carlstad, N. J., 1875, graduated from Grammar School No. 35 in New York at the age of fifteen. He then entered the pharmacy of his brother, A. Niederer, Ph.G. In 1893 he entered the College of Pharmacy as a student and was on the Junior roll of honor, graduating with the Class of '95, proving himself a bright and clever student, receiving great praise from professors for his accurate work. He took his Degree of Doctor of Pharmacy in '96. He was beloved by his classmates, and will, we trust, receive such reward as his diligence and amiability well merit.

FRANK P. OGDEN, PHAR.D., '96.

born at Middletown, N, Y., 1874, is a graduate of the Middletown High School and was President of his class. He was apprenticed with Mr. W. D. Olney at his pharmacy in Middletown, became a student of the College of Pharmacy in '93, graduating in 1895. He took his Degree of Doctor of Pharmacy in 1896.

Always an indefatigable worker, a brilliant student and accurate pharmacist, he is sure to do honor to his Alma Mater. He is at present with Mr. Congleton, corner of 99th street and the Boulevard.

MAJOR TIMOTHY E. WILCOX, surgeon at Fort Schuyler, N. Y., is authority for the statement that *Agave Palmeri* is a specific in muscular rheumatism and intercostal neuralgia. Also that *Jatropha megarrhizza* of the natural order Euphorbiaceæ has seeds which in doses of one or two act as an excellent cathartic. It grows in the Western United States and is closely allied to the castor oil plant (Ricinus communis).

W. A. BASTEDE, Sec'y pro tem.,
Torrey Botanical Club.

Alumni Column.

SUMMER OUTING OF THE ALUMNI ASSOCIATION.

IF the Outing Committee had made special arrangements with the "Clerk of the Weather" to furnish on June 17th, the worst day in his entire repertoire, the result could not have been more satisfactory.

About 6.30 A. M., when the up-to-date drug clerk was preparing to forsake his down couch, the rain commenced to fall in heavy showers, and in heavy showers it continued all day; at times the sun would struggle to break through the clouds, but the struggle would be brief and the shower following would be harder than its predecessors. But despite the continual downpour, the members and friends of the Alumni Association were not at all afraid of a little wetting. The invitations stated "Rain or Shine," so when the hour for starting arrived, about eighty persons were waiting in and around the depot at Long Island City. Soon the party started in two special trolley cars; the trip through the picturesque towns of Winfield, Woodside, Newtown, Corona, Elmhurst and Flushing would have been delightful on a pleasant day, and even with the inclement weather the ride was not devoid of interest. All being in good spirits the time passed quickly, and before many were aware of it, College Point was reached. From the Point the party was taken to Point View Island in carriages, arriving there all were delighted with the place and surroundings, the only regret being that the storm interfered with the ball game and other amusements, and also prevented the party from strolling about the island. All however, voted it an ideal spot to hold the outing of the Association. Nature certainly designed this for the "Beauty Spot" of the Long Island shore. The Island, which is separated from the mainland by a small stream, through which the water flows in and out with the tide, comprises about thirty acres, which is carefully laid out with gravel walks that wind in and out among the trees, carriage drives and broad meadows, where ample provision is made for all kinds of out-door amusements. The whole island being at the entire disposal of visitors.

Soon after arrival, dancing commenced in the large pavillion, which was participated in by most of those present. Then came the games, or some of them at least. First on the list was the horseback race, and such a race. President elect Searles being the only sporting man present, he was made judge. At the command of starter Davies, to "mount and go," off they started. It was certainly a laughable sight, sometimes both horse and rider were down, but neither seemed to worry, the race was all too quickly over and Messrs C. H. Kalkenbrenner and H. W. Ihmels were declared the winners. For prizes they received a travelling set donated by Mr. Thos. F. Main. Then followed the potato race, and it is certain the Long Island farmers might have learned many new points in regard to picking up potatoes had they been present. The race was won by Mr. Kalkenbrenner who received a box of cigars donated by President-elect A. C. Searles.

The shooting match was won by Mr. O. Grube, prize being a box of cigars donated by Mr. Thos. M. Davies. The most exciting of all the games was the bowling tournament, and of course no professionals being present, all stood an equal chance to win. There were fifty-six entries; early in the game R. Gies took the lead with a score of twenty-five, and kept the same until near the end, when Mr. Buss of Brooklyn bowled twenty-seven. This aroused new interest and when President Stover soon after also made twenty-seven, and thereby tied Mr. Buss, the cheering was terrific and intense excitement prevailed, but in the "roll off" Mr. Buss won by one pin. The prize he received was a silk umbrella donated by Mr. Max Breitenbach. The lady's prize for bowling was won by Miss Dode, with Miss Tish and Miss Speckmann in close pursuit. Miss Dode received a bottle of Extract donated by Mr. Solon Palmer. The dinner was all that could be desired, and one of the very best the Association ever sat down to. Mr. Witzel richly deserves the reputation he has won for the good quality of his dinners. When coffee had been served, President Stover, who presided, arose, and in a few well chosen words welcomed all who had braved the storm, and helped to make the Outing of '96 the most successful of recent years. He stated that as there were more games and dancing to follow, the speeches would be few and brief. The other speakers were President-elect A. C. Searles, Alfred H. Mason, Secretary of the College and John Pfeiffer of the class of '81, who was introduced as an old member, also as a representative of the Kings County Pharmaceutical Association. At 10.30 all hands started for home well pleased with the day's pleasure, and incidentally the Alumni again added another wreath to its laurels of success for which we are indebted to the excellent arrangements made by the Outing Committee.

Among those present were President Alfred Stover, President-elect A. C. Searles, John Pfeiffer, '81.

'93.

Julius Tannenbaum, Eugene F. Lohr, H. W. Rensswig, Chas. P. Zwingli and Jos. Siegmann.

'94.

Nelson S. Kirk, Thomas M. Davies, Chas. O. Grube, Max A. Auerbach, H. A. Herold, Ludwig Erb and Frank N. Pond.

'95.

Herman Walter, Rudolph Gies, Adolph Koerber, Geo. J. Dürr and W. M. Ohlandt.

'96.

Adolph Drolinger, J. Hostmann, Karl Schnackenberg, William C. Vincent, Harry D. Cannon, Fred. L. Coates, Orrin Ives, Eugene Zeiner, W. P. Gregorius and Chas. Gerken.

'97.

A. C. Killian, J. W. Schultze, Richard Devine and Otto W. Grube.

Geo. H. Hummel, Morris Manheimer, Oscar Blutz, L. W. De Zeller (of Seabury and Johnson,) M. W. Bussenschutt, H. Ihmels, C. H. Kalkenbrenner.

LADIES—Miss Julia La Wall, '96, Miss Mary E. Little, '97; Mrs. A. C. Searles, C. P. Zwingli, Siegmann, J. Tannenbaum, R. Gies, Misses Katie Fisch, Mattie Dode, Annie Speckmann, Rose Owen, Bertha Lohr, May Vincent, May Curley, Ida West, Lena Herbert, L. Henak, May Owen, C. Dode, M. Groome, R. Seigmann, M. Bussemschutt, Smyth, and several other ladies and gentlemen whose names the reporter failed to obtain.

NOTICE.

The group photograph taken of those present at the Outing is on view at 543 Third avenue. It is a good picture, size 10x12, mounted on card. 17 x 14. Price, 75 cents each (cash with order). Apply promptly to Thos. M. Davis, 543 Third avenue, New York.

THE Editor acknowledges with thanks an interesting acccount of the "Alumni Outing" from Geo. J. Dürr, but regrets that limited space prevents this addition to the official communication reported. Mr. Dürr is an exemplary reporter, and we hope to hear from him again.

Julius Tannenbaum, the captain of the "white duck" brigade, was the most disappointed man in our circles at the failure of the gods to produce a pleasant day for our Outing. Mr. Tannenbaum ordered his recruits to appear in white duck trousers. The incompatability of College Point mud with duck trousers was instrumental in preventing the recruits appearing as their captain ordered. Julius now crows that papa's pants will fit little Julius, who will appear in them as soon as that worthy offspring assumes the title of Ph.G.

Eugene F. Lohr, the efficient representative of the Class of '93, has become a rival of the famed Bill Nye. After the Outing a party consisting of leading members of the Association, with their wives and sweethearts, adjourned to one of New York's famous restaurants, wherein Mr. Lohr exhibited his humorous ability, which made the corridors of the establishment ring with mirth.

John W. Ferrier, '76, junior member of the firm of J. N. Hegeman & Co., and manager of the Broadway and 30th street store, occupies an envious position in Masonry, a position which can only be obtained by diligence, which is one of his accomplishments. He has reached that degree in which the red fez is used at their demonstrations.

F. A. Crookshank, '92, has just graduated at the Chicago College of Dentistry, and has located in that city. In a letter to a Journal reporter he wishes to be remembered to his many friends, especially Fitz, Lure, Milner and Roberts, all of '92.

President Stover's suggestion to hold another Outing in the fall will be discussed at our next meeting. Should this suggestion meet with approval the friends of the Association will be informed of same, as to the date, etc., and place, in a later number of the Journal.

N. S. Kirk, whose name appears under the clever articles of the '94 column, is spending his vacation in his southern home. 'Tis hoped that Mr. Kirk's vacation will be brief, as his assistance to the Association is too valuable to be spared.

Geo. F. Burger, Ph.G.,

115-119 W. 68th St., N. Y.

Class Notes.

'93 NOTES,

I will have to be content with giving the '93 men present at the Outing and leave the rest to the official reporter. There was dear old "Popper" Zwingli and his wife, Mr. and Mrs. J. Tannenbaum, Seigmann and sister, Ihmels and several of somebody's sisters, Reusswig alone, beautiful and dignified as ever, Lohr and sister. Ihmels, with the assistance of his friend Mr. Kelkenbrenner, kept up the reputation of '93 by winning the horse race.

Billee Reusswig has been elected an honorary member of a G. A. R. post in Somerville, N. J. His efforts with powder (face) and ball (naphthaline) were appreciated, and he was honored accordingly by the vets.

There have been some valuable additions to the medical fraternity this year. From the P. and S. we had J. Horni, C. Schlichter and H. Owsley, and from the University, C. T. Taylor.

Horni has secured an appointment in the E. D. Hospital of Brooklyn, and by force of that which is called intelligence by some, but merely the '93 trait by us, rose in a week to the position of house surgeon.

C. T. Curtis is assistant house surgeon to the Fitch Home for Soldiers at Noroton Heights, Conn.

Wm. Hoburg, Jr., has gone to Long Branch to assist in Mr. Atwood's pharmacy.

Jacob S. Stage, formerly with Hetherington on Vanderbilt avenue, has resigned that position to accept one with Charles S. Erb, 121 Amsterdam avenue. "Jake" has just joined the Alumni Association and N. Y. C. P. Cyclers.

Eugene F. Lohr, Ph. G.
373 Third Avenue.

'94 NOTES.

Owing to sudden illness, the '94 correspondent presents but few items this month. However, he has promised to do better after his return from Old Point Comfort, where he is now recuperating.

Clarence W. Race, formerly with McIntyre on Sixth avenue, resigned his position a short time ago, to assume charge of the prescription department of Chumai's pharmacy, Eighth avenue and 23d street. Clarence is Second Lieutenant of the N. Y. C. P. Cyclers, and they consider him their "crack stayer," in the long distance races, as he recently rode from Albany to this city in less than twenty-four hours.

COL. LOUIS B. WADE, of "knock-out-drops" fame, is on the road, not to ruin, but to represent Fraser & Co., in Wisconsin, Michigan, etc., where his debonair ways will undoubtedly place him in the first rank of popular commercial travelers. We all wish you good luck, Colonel, but don't forget your Alma Mater.

EMIL SCHLICHTING has gone to Germany on a scientific tour. In a letter to the '94 correspondent he outlined a sketch whereby he is to first visit his parents in Stade, after which he is to enter Fischer's Laboratory for a two years' course of Advanced Organic Chemistry. Here he will select his particular branch of study, after which he will return quite a learned man. Before leaving he made arrangements to secure the ALUMNI JOURNAL regularly, and wished to be remembered to his many N. Y. C. P. friends.

GUS. ABBEHEUSEN sailed on June 20th for Germany, where he will spend the summer months rambling through his native country. "Abbie," as his friends are won't to call him, is quite a wheelman and devotes no little time spinning along Brooklyn's famous thoroughfares. He will be remembered as the proud possessor of a hirsute growth called in color Schenectady, because it is near Auburn.

OUR Sociables have demonstrated the fact that pharmacy is not alone the forte of some of our bright '94 boys. For instance, Davies would make a good auctioneer, Burger at Keith's would "bring down the house" as a monologue artist, while Herold as a lecturer and Wurthman as a dancing master would be hard to beat.

NELSON S. KIRK.

'95 NOTES.

With this number of the JOURNAL the reporter of this Class assumes office. I will endeavor to uphold the success with which these notes have heretofore met; but to enable me to do so, ask you for your kind assistance, as it is impossible for me to keep track of you all as you are located in different sections of the United States. So, if Mr. A, N. Y. C. P. '95 hears that Mr. B, N. Y. C. P. '95 has done anything which he believes would interest his classmates, drop a note to your class reporter, who will mention such occurence in the next edition of the JOURNAL.

MR. RUDOLPH BOENKE, my predecessor, has left the employ of Mr. Hohenthal, and has accepted a position with Mr. Proben at 87th Street and Second Avenue.

MR. OTTO HENSEL expects to matriculate for the P. and S. college course this fall.

MR. LURCH has resigned his position at 40th Street and Third Avenue. His present whereabouts are unknown.

GEORGE E. MANVILLE, "Esq.," the genial "fatty acid radicle," has been making a tour of Central New York in the interest of Messrs Boehringer & Soehne, and is now telling his friends of the beautiful scenery and the moonlight walks he had whilst away. He reports good business however,—well George is a hustler anyway. We hear he has accepted the honorary position of Secretary of a "Ladies Aid Society" whilst away.

HENRY G. STEINHEUER, late with his uncle, H. A. Cassabeer, has accepted a position with Nickells & Co., 65th Street and Columbus Ave. the store formerly owned by Thomas & Co. Henry says (?) there is no place like 18th Street and Sixth Avenue though.

As Mr. Burger will report the Alumni Outing, I will merely mention same by saying that even the pouring rain did not keep a goodly crowd from attending, the '95 class being represented by Messrs Gies, Ohlandt, Dürr and Walters.

B. R. DAUSCHA, PH. G.,
Caldwell, N. J.

NOTICE.

Will all the members of the Class of '95 who have not received their class picture, kindly inform the undersigned, and he will see that they get them.

H. B. FERGUSON,
90 Maiden Lane, N. Y.

CLASS OF '96.

E. UHE has accepted a position with Wonters in Weehawken, better known as King Kelly's domain.

HAYWARD, after spending a few weeks in Hoboken and Hackettstown, is now with Jennings in Far Rockaway.

I UNDERSTAND Hoyt has accepted a position in Georgia. I should reckon he would not receive a cool reception when he reaches there.

That the majority of our boys were successful in passing the N. J. Board shows once again that we are still in it.

Rumor has it that Hayward turned the heads of several Hoboken girls. What will he do in Far Rockaway?

J. G. Block, Jr., Ph.G., is at the old stand, where he takes special pride in recommending Kuehne's Corn Cure.

Some of the boys who passed the N. J. Board are Maasman, Block, Ackerman, Hayward, Branner and several others.

Hostmann is with H. A. Vogt.

Miss Lawall and Messrs. Maasman, Shears, Frank, Schuacky, Branner, Drollinger, Cannon, Vincent, Gerken, Hummel, Gregorius, Zeiner, Klingman, Hostmann, Mannheimer, were present at the Outing.

Theodore Diehl is with Chas. F. Schleussner, 644 Bedford avenue, Brooklyn,

Berthold Flesch, formerly with A. H. Bischof, is manager of the Rivington Pharmacy, 304 Rivington street, New York.

John McLaughlin is now a druggist on Blackwell's Island.

Alexander Deutschberger, Second Vice-President Class of '96, is with A. S. Baselow, Madison avenue and 112th street.

J. Hostmann,
1691 Lexington Ave., New York.

OBSERVATIONS BY A MEMBER OF THE CLASS OF '81.

If Seabury and Johnson's bowling team was composed entirely of such bowling talent as was displayed by one of the commercial travelers, Mr. de Zeller, it would win the first prize in next year's tournament.

Not alone can Alumniman Searles run for President, but he can run on the tannin (tan bark), he having won the fat men's race.

The smiling face of John Oehler, Major of Carlstadt, was missed, but that did not prevent the boys from taking "a smile".

"Our Treasurer," A. Henning was absent, but his debtors did not miss him.

The retiring President, A. Stover, does not believe any longer in univalence, but is becoming bivalent, judging from the attention he gave his lady friend.

Mr. Davies, theactive Chairman of the Committee of Arrangements, demonstrated that he was an auctioneer. "Cut prices" did not prevail.

J. Pfeiffer.

Alumni Association.

The next general and Executive Board meeting of the Association will be held on Wednesday evening, July 1st, when a delegation of new members and a Third Vice-President will be elected.

The following appointments have been made by President Stover:

Delegates to the American Pharmaceutical Association—Thos. F. Main, Rudolph Gies, R. G. Kelliner, Fred. Hohenthal, Chas. S. Erb.

Committee on Papers and Queries—H. A. Herold, John Oehler, Harry B. Ferguson.

Committee on Publication — Katherine C. Mahegin, Julie M. Lawall. D. T. Larimore.

Committee on Entertainment — Nelson S. Kirk, Rudolph Gies, Julius Tannenbaum, Geo. F. Burger, Eugene Lohr.

Students of the college are invited to meet the members of the Association socially every Wednesday evening during the college term in the Alumni Room of the college.

Special lectures on interesting subjects will be given every second Wednesday at eight o'clock during the winter months. The subjects will be announced in the Alumni Jounnal.

Social receptions will be held on every third Wednesday evening of each month at the college, to which members and students with their lady friends will be cordially invited.

Nelson S. Kirk.

NEWSY AND PERSONAL.

Erbs, Griffin, Gies, Ferguson and Tannenbaum have subscribed for a new flag, "Old Glory," which will float over the College on July Fourth.

Otto Maier, Ph. G. '85, M. D. '91, has removed to 316 E. 18th Street, New York City.

Karl Schackenberg, '96 Prizeman, has purchased the business of A. Richter, Madison and Pearl Streets. We wish him every success in the undertaking.

Professor Coblentz and his family are spending the vacation at Springfield, Ohio.

Dr. Daniel Lewis has been re-elected President of the New York State Board of Health.

Henry Fleugel, 1325 Second Avenue, with Dr. John F. Hein and John Hosh will visit the Catskill mountains, and from there the Thousand Islands, fishing for two or three weeks.

ALKALOID-STEARATES AND THEIR THERAPEUTIC APPLICATIONS.

Physicians not infrequently prescribe mixtures of alkaloids with fats and oils, for ointments or in suppositories. Undoubtedly these mixtures would be more effective, if the alkaloids were soluble in the fats and oils, which is not the case with the ordinary alkaloidal combinations. To remedy this defect, Francesco Zanardi has prepared the stearates of the alkaloids mostly used in this way, viz: those of morphine, atropine and cocaine. The stearates are all soluble in fats and in petrolatum. Their properties and methods of preparation are given in the following:

Morphine stearate ($C_{17}H_{19}NO_3C_{17}H_{35}COOH$). Prepared by direct union of the components or by double decomposition. According to the first method, equimolecular quantities of stearic acid (5.68) and morphine are allowed to react upon one another. The stearic acid is dissolved in a flask in 100 ccs. of absolute alcohol, by means of a gentle heat, and the morphine added in small quantities at a time. The warm solution is filtered, when upon cooling the morphine stearate crystallizes out. By concentration of the mother liquors, further yields can be obtained. The crystals are dried between 30° and 40° C.

A completely neutral stearate can be obtained by decomposing morphine hydrochlorate with sodium stearate.

The sodium stearate is prepared by adding to a warmed mixture of 5.68 g. finely cut stearic acid in 50 g. distilled water, 20 ccs. (= 0. 8g. NaOH) normal sodium hydroxide solution. To the resulting solution, 7.51 g. of morphine hydrochlorate, dissolved in 100 g. distilled water is added. Upon mixing, the morphine stearate separates out as a bulky, white precipitate; this is collected on a filter and washed with water until the washings are no longer rendered turbid by hydrochloric acid, or by silver nitrate test solution after acidulating with a few drops of nitric acid. The stearate so purified is dried and re-crystallized from alcohol.

Morphine stearate forms white shining, crystalline scales, unctous to the touch and melting at 84–86°. At 100° decomposition sets in and at 150° the mass is blackened. In water, morphine stearate is practically insoluble; in cold alcohol it is only slightly soluble; in warm alcohol readily soluble. Ether dissolves but a small quantity, petroleum-ether, benzene, chloroform and oil of turpentine still less. In fixed oils it is soluble to about 1% at ordinary temperatures, fats and vaseline also dissolve it.

Stearic acid is tested for in this stearate by the addition of copper sulphate to the finely-divided substance suspended in water; the presence of morphine is proved by nitric acid and the other usual reagents.

By means of this stearate, containing 50.17% of morphine, we can prepare morphine "oil," morphine salves and morphine suppositories.

Atropine stearate ($C_{17}H_{23}NO_3 \cdot C_{17}C_{35}COOH$). Prepared according to the same methods employed for the corresponding morphine salt.

It crystallizes in fine, white, shining needles, unctuous to the touch, melting at 120°, and decomposing at 170°.

The solubility of atropine stearate in various solvents does not differ materially from that of morphine stearate. Its atropine content is 50.43%.

The presence of stearic acid is proved as before with copper sulphate; the atropine is separated from the stearate by means of tartaric acid and tested for in the usual manner.

The solution of atropine stearate in oil of sweet almonds (0.1:50.0) furnishes an efficient substitute for hyoscyamus "oil" (D. A. III) and belladonna "oil." The stearate is dissolved in the oil, using a gentle heat. In place of extract of belladonna in suppositories and ointments, atropine stearate can find a rational employment.

Cocaine stearate ($C_{17}H_{21}NO_4C_{17}H_{35}COOH$). This substance is also prepared according to the above-mentioned methods. For 2.84 g. of stearic acid, 3.03 g. of cocaine are used.

Cocaine stearate crystallizes in white, shining needles; united in the form of bundles; melting-point about 90° C. It contains 51.63% cocaine. Solubility about the same as the above.

The tests for stearic acid are same as for the morphine salt; cocaine is identified by the usual reactions, after separation with tartaric acid. — *Apoth. Zeit. 1896, p. 141 through Bollettino chimico farmaceutico, 1896, 4*, and *Pharm. Review.*

PARESIS method to remove the disagreeable taste of Cod Liver Oil is to take four hundred grams of oil, 28 grams of roasted and ground coffee, ten grams of pulverized animal bone black. Heat this mixture to 60° C. in a closed receptacle for fifteen minutes. Let it stand for 2 or 3 days, shaking occasionally, and then filter. This leaves a limpid amber oil with odor and taste of coffee.—*Gaz. Médicale de Liége.*

WHEN doctors learn that medicines never cure any disease, but may only remove the cause, that the system may restore itself, then there will be a great revolution in the medical armamentarium, and the manner of using, to obtain the desired results.—*J. M. Duncan.*

VICTOR HORSLEY'S Antiseptic Wax is prepared by melting, 7 parts beeswax; 1 part almond oil, and adding 1 per cent. salicylic acid —it has to be sterilized by boiling before use, and kept in covered stoppered bottles.

MEMBERS of the Alumni Association should not omit to study the advertising sheets of the "ALUMNI JOURNAL," and use all their influence to promote legitimate reciprocity.

EMULSIFIED COD LIVER OIL.*

BY P. C. ARBLASTER, PH. C.

The principal qualities that a cod-liver-oil emulsion should possess are: (1) Fine division of the oil globules; (2) non-inseparability; and (3) palatability. Referring to Irish moss emulsions, he said the following formula is most satisfactory:–

Irish Moss (picked)	ʒj
Cold Distilled Water	℥v

Allow the water to stand on the moss for one hour, then boil for ten minutes, and strain through muslin and make up to 6 oz. To this; in a bottle when nearly cold; add—

Cod-Liver Oil	℥viij.
Rectified Spirit	℥j.
Water to make	℥xvj.
Flavouring	q.s.

Use a quart bottle, shake the mucilage well round the side, then add the whole of the oil, and agitate to form a nucleus; then add half the water, and, lastly the spirit, flavouring, and as much water as is required to make up the quantity.

Samples were shown, including one, "a so-called emulsion (in reality a soap), made by shaking together equal parts of cod-liver oil and freshly prepared lime water." He did not see why such a preparation, properly flavored, should not come into general use. A good mask for the odour and taste of cod-liver-oil is much needed, and the author gave three formulæ, each of which is sufficient for one pint of the finished product:—

(1) Oil of wintergreen, oil of sassafras of each 15 Minims.

(2) Oil of wintergreen, oil of bitter almonds of each 20 minims.

(3) Oil of neroli, oil of bitter almonds, of each 12 minims; oil of cloves 2 minims.

Oil of lemon appears to be of little use. Elixir of saccharin is very useful in bringing out the taste of the flavourings used

---

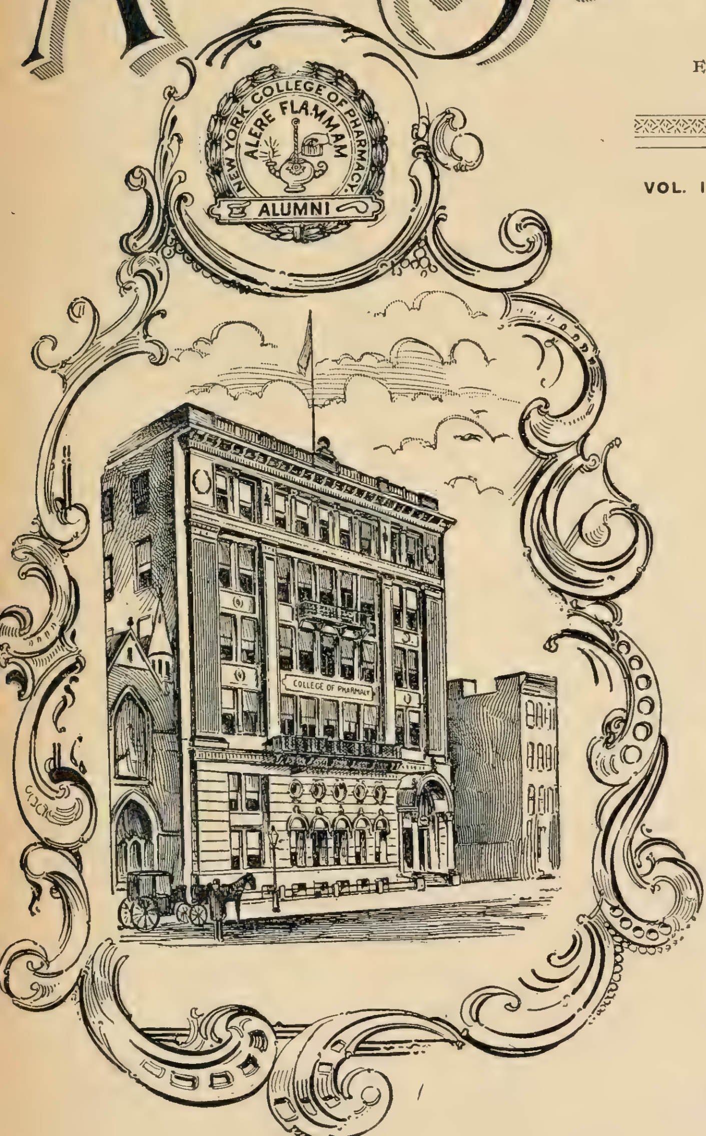
*Abstract from a paper read before the Midland Chemists Association and published in the *Chemist and Druggist.*

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. No. 8.

August, 1896.



Contents:

CONCERNING EXPLORATION UPON THE LOWER ORINOCO, - - 185
Prof. H. H. Rusby.
A REAGENT FOR ALCOHOL. - - 191
SHALL DOSES AND SOME OF THE NEW SYNTHETIC REMEDIES BE INTRODUCED INTO THE NEXT U. S. PHARMACOPŒIA ? - 192
Dr. Chas. Rice.
CHEMISTRY AS A GENERAL EDUCATION, - - - - - - 196
Prof. Peter S. Austen, Ph. D., F. C. S.
EDITORIAL, - - - - - - 203
THE EDUCATION OF PHARMACISTS. - - - - - 204
ALUMNI ASSOCIATION, - - - 205
CLASS NOTES—Class '93 - - - 206
" " Class '94, '96 - - 207
THE PHARMACOPŒIAL STANDARD, 208
Prof. J. U. Lloyd.
SOME CONSTITUENTS OF THE ROOT OF POLYGONUM CUSPIDATUM, 209
A. G. Perkin, F. C. S.
SPIRITUS MYRCIÆ, - - - - 210
Karl Schnackenberg.
INCOMPATIBLES FROM THE DRUGGISTS' STANDPOINT, - - 211
MISCELLANEOUS NOTES, - - 211

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . .

digestive inertia

Functional Atony, or whatever you may call it, is often at the bottom of a case of Infantile Diarrhoea during the summer months. If the digestive juices do not properly convert the food it ferments in the intestinal tube.

Lactopeptine

by artificially supplying the necessary digestive ferments, prepares the ingested nourishment for absorption, thus aiding in the restoration of normal function.

This is NOT THEORY, but DEMONSTRATED FACT.

Be sure, however, that it's

Lactopeptine

and not some inert substitute. Send for samples and literature.

The New York Pharmacal Assoc.
Yonkers, N.Y.

OLDEST STAND ON BROADWAY

TRINITY CHURCH 1697
MILHAU'S PHARMACY
BALTIMORE 1813.
NEW YORK 1830.
AT 183 BROADWAY.
CORTLANDT ST
DEY ST.
TRADE MARK.
ST. PAUL'S CHAPEL 1764

THE "ANIMAL EXTRACT CO.'S"

CARDINE, heart extract, for Heart troubles

CEREBRINE, brain extract for Epilepsy, Brain, Nerves, Hysteria, etc.

MEDULLINE, extract of Spinal Cord, for Locomotor-Ataxia, etc.

MUSCULINE, for Muscular Rheumatism,

OVARINE, for Diseases of Women, Sterility, Nervous Prostration, etc.

TESTINE, for Nervous Debility, Impairment, Impotency Exhaustion, etc.

THYROIDINE, for Obesity, Goitre, Skin Diseases, Myxoedema, etc.

☞ *Positively guaranteed as the only brand always strictly according to Dr. Hammond's published formulas. $100 forfeit if not.*

Dr. DECLAT'S PHENIC PREPARATIONS, for Cancer, Consumption and all Fevers.

Medals awarded, Paris, Lyons, &c. for Phenic Acid and Compounds

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER
183 Broadway, - - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE Alumni Journal

LIBRA
NEW Y
BOTAN
GARDE

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. **New York, August, 1896.** **No. 8.**

CONCERNING EXPLORATION UPON THE LOWER ORINOCO.

BY PROF. H. H. RUSBY.

In response to a request from the Editor, a preliminary sketch is here presented of the work of exploration in Venezuela with which I have been associated during the past spring. It is expected that the study of the collections made will later furnish material for further contributions of a more detailed and interesting character.

The present Orinoco Company succeeds to the rights and title of the Manoa Company, Limited, which had received from the Venezuelan government a grant of land, supposed to include about ten million acres. This grant includes, in general terms, the territory extending from near the western or upper limits of the delta of the Orinoco to the coast, including by its northern boundary several of the islands of the delta, and extending southward to the crest of the Imataca Mountains. It is said to have been indicated by Humboldt as the most favorable and promising region for colonization which he had seen during his travels in South America. The present population is limited to a number of scattered Indian villages, their inhabitants all peaceable, several small villages with civilized inhabitants, a few scattered ranches and plantations and the pretty little modern village of Manoa. The terms of the grant stipulate that all rights of the existing residents are to be strictly respected. Besides their terrestrial rights, the Company enjoys control of the navigation of the southernmost branch of the delta, which traverses the concession. Most of the tract has never been surveyed or even explored. and all existing maps of this portion are based upon such observations as could be made from passing vessels or from such adjoining high lands as afforded a partial view, in connection with deductions based upon the examination of the borders.

The expedition which I accompanied was designed to explore and map the concession, to prospect its mineral deposits, study its vegetation and ascertain the conditions affecting its colonization. As the expedition is likely at some time to possess more or less of historical interest, an account of its personnel is here proper.

The party consisted of sixteen persons and was well organized under the direction of Dr. A. C. Rogers, Superintendent of an institution for feeble minded children at Faribault, Minnesota, the headquarters of the Company and the place of residence of most of its promoters. The engineering work was under charge of Mr. W. C. Weeks, an accomplished graduate of the Engineering Department of the University of Minnesota, assisted by Mr. B. S. Adams, who had previously enjoyed an extended and successful experience in pioneer work upon our western frontier.

Three prospectors were included in the party. Mr. C. A. Parker, of Austin, Minn., and Mr. W. H. Grant, of Faribault, had been very successful as prospectors in the western United States, including Alaska, while Mr. E. O. Halberson, in addition to a long practical experience, had enjoyed the advantages of a course of study in the German mining schools. Mr. Halberson, by the way, at one time conducted a pharmacy in one of our western territories.

Mr. W. Dart, of Faribault, accompanied the party as a zoologist, especially interested in ornithology, and brought a record for expert marksmanship which was admirably maintained throughout the expedition.

Mr. Frederick Gregory, a pharmacist of St. Cloud, Minn., had had considerable experience with life in the Argentine and other parts of Spanish America, and accompanied the party as an interpreter and clerk, in which latter capacity he was assisted by Mr. Albert Clement, of Faribault.

Mr. S. A. Thompson, of Duluth, a close student of South American affairs and an accomplished writer upon economic questions relating to his State, assisted the director as adviser, attended to many of our business affairs and sacrificed himself unselfishly and patiently upon the altar of our commissary department.

Mr. Walter H. Coffin, Mr. John McDonald and Mr. Harry H. Verge attended to the mechanical engineering, the two former devoting themselves especially to the launch and the boats, the last to work on shore.

The botanical work was under charge of the writer, assisted by Mr. R. W. Squires, an undergraduate student of the University of Minnesota, especially interested in the collection and study of cryptogams. Our work was greatly furthered by Mr. J. H. Hart, the learned director of the Royal Botanical Gardens of Trinidad, not only by the information and advice which he contributed, but in furnishing us with the valuable services of one of his men who had had a long experience in collecting orchids and in doing bush work.

Our bushmen and laborers were black men, taken from Port-of Spain under legalized contract for a definite period.

Full reports of the work of each of the departments above enumerated are rendered to the Company and incorporated into the report of its President. In the present sketch I shall merely indicate the general character of the region and the nature of the work, relating such of the incidents of the expedition as appear of general interest to the readers of the JOURNAL. It is worth noting at the start the liberal provision which was made for the performance of scientific work in connection with the economic work of the survey. While the former was not, of course, permitted to interfere with more practical matters, yet the liberality displayed by the Company in rendering it possible should be appreciated in scientific circles, and constitutes the only good reason why an account of its affairs should find a place in a journal of this kind.

The Orinoco is divided by a narrow portion near Bolivar into the Upper and Lower Orinoco. This locality is known as the Angustura (meaning 'the Narrows'), and from this term we get the name for the bark coming from that region and for the bitters made, or supposed to be made therefrom. At this point the rise of the river during the rainy season amounts to about ninety feet. This rise is diminished as we proceed toward the mouth, where the river widens and divides into numerous (about sixty) branches, constituting its delta. During the dry season the current of the Lower Orinoco is slight and the river is affected by the rise of the tide for nearly two hundred miles from the coast; but as it becomes swollen the current increases, and the numerous outlets become unable to discharge the water brought down to them. The current is then not only swift but highly treacherous, setting here in one direction and there in another, running one way at the surface and another a few feet below, and thickly beset with eddies, many of which are continually shifting their position and many of which are so powerful that even our launch had to be carefully handled in order to resist their influence. Bathing in this river after its rise is exceedingly dangerous, as an undertow sets outward from the shore in most places, making it a very exhausting operation for an ordinary swimmer to pass in over the hundred feet nearest to the bank. In this way one member of our party, Mr. Coffin, became exhausted and unable to reach the shore, although but a few yards away from it. His death at the last moment, when he had been caught at some distance below the surface by an oar, was due to the sudden appearance of one of these eddies, which whirled him out of reach at the moment that Mr. Weeks dove to grasp him. Although every effort was made, the furious current and the muddiness of the water rendered it impossible to find any further trace of him after this fatal moment. Upon another occasion Messrs. Dart and Gregory had a very narrow escape from drowning through the oversetting of their boat by a sea-cow, which arose underneath it. Notwithstanding that this was during the dry season, when the current was comparatively weak, both men reached the bank in a completely exhausted condition. These two occurrences impressed all the members of the party with a sense of the dangers of falling into this river, such as no ordinary observation of its current could ever have done.

The islands of the delta have never been explored, nor have even those channels which are most navigated been charted. It is not to be supposed that these islands consist altogether of deposited sediment. Although thus augmented and many of them altered in appearance, yet many of them have a basis of rock and have been formed rather by deviations of the stream, which has cut them off from the main. Aside from the properly recognized islands, which are numerous, there are many smaller ones (perhaps we may regard them as in process of isolation) which during the dry season are either a portion of the main, or separated from it only by swamps, but which during the rainy season are separated by broad channels. The inland swamps among these higher portions form a striking feature of the region. Some of them are permanent, while others appear only upon the annual rise,—for after the water has reached a certain point, and the banks begin to be overflowed, every additional foot of rise means the inundation of hundreds of square miles of low land. The higher, or perhaps it would be more expressive to say the less low, of these lands, are covered with forests, those species which can best endure the inundation successively giving place to the others as we ascend, so that to the practiced eye of the forester, the altitude of a given spot can be determined within a very few feet by the determination of its trees. The lower lands—"savannahs"—are covered with grass and sedge interspersed with clumps of shrubbery, while still lower they are inhabited by partial or complete aquatics. Over such a savannah we have hunted dry-shod upon one day, but found it upon the following covered by from six to eighteen inches of water, through which the serpents, in incredible numbers, scurried in all directions as we waded about among the bushes. The streams which run through these marshes, or rather stand among them, for there is scarcely any motion of the water perceptible, are astonishingly deep, even during the dry season. Yet from the greatest depths aquatic grasses, sedges and other plants will frequently arise so thickly as to convert the surface into an apparent meadow and to render the passage of a canoe through them extremely difficult or even impossible. In such cases the members of our surveying party resorted to the expedient of attaching boards to their feet, after the manner of snow shoes, slipping along over the surface of the vegetation and pushing the canoe between them until the open water was again reached. The succession of these swamps and lagoons beyond and among the elevated spots standing back from the river appears intermidable to those who endeavor to pass them, and one hill after another is reached only to discover beyond a region to cross which will tax to the uttermost the ingenuity and endurance of the party. Yet it must not be considered that the country, as a whole, is for this reason either impassible or uninhabitable. *Per aspera ad astra!* Beyond all these difficulties stand the smiling mountains, with cool and invigorating climate, pure and beautiful streams, in all probabillty an almost complete freedom from the insect pests of the low land, with noble forests and lovely flowers, and a paradise of birds, among which those of gorgeous plumage are abundantly varied by others of charming song, and with instances not altogether lacking in which both these charms are combined in the same individual. All that is needed is to establish a comfortable route from the riverside in order to open up to the tourist or to the settler a region with few equals, either for natural charms or natural wealth, upon the Atlantic coast. Such a route was apparently found leading backward from the little village of Santa Catalina by Messrs. Parker, Adams, Squires and myself. Although time did not permit of our pursuing this route to reach the mountains, Messrs. Grant, Adams and Halberson are at present engaged in such an attempt.

Near the coast there are very large tracts which are inundated at each flood-tide and left bare and muddy by the ebb. In these regions the houses which exist are raised above the tidal mud and connected by elevated log or plank walks, nothing but water being in sight when the tide is up. In spite of the double inundation each day, these tracts are heavily forested, apparently, more than half of the individual trees and shrubs in the region which I visited near Cariapa being palms. Even at ebb-tide these districts are traversed with difficulty, owing to the numerous and crooked little (but often deep) bayous by which they are traversed. Over all the higher lands exist heavy forests, their special characteristic being perhaps the prevalence of flowers and fruits of large size, many of them indeed gigantic. There is the full proportion of climbing plants found in tropical regions, binding together both trunks and crowns into a dense thicket, and a full proportion of them are thorny or prickly, Probably the most troublesome of such plants in certain districts are the reclining Sclerias and other Cyperaceous species, whose toothed edges catch upon even the smoothest surfaces and may cut to the bone the finger which sweeps suddenly across them.

Among the most conspicuous of the tree families are the Lecythidaceæ, Sapotaceæ, Meliaceæ, Leguminosæ, Palmæ, Apocynaceæ and Laurineæ. The Melastomaceæ, so numerous, large and conspicuous in the Andean flora, are here few and small, while Compositæ of all kinds are apparently scarcer than in any other region which I have ever visited. Among climbing and twining plants the Leguminosæ and Bignoniaceæ are the most conspicuously represented families and probably the most numerously also, while the Malpighiaceæ and Passifloraceæ are well represented. Although the economic features of the flora will be made the subject of a special report, reference may here be made to the abundance of soft woods yielding lumber suitable for building, as compared with other tropical forest regions. Hard woods, of elegant texture and high polish, are however very abundant also.

The term "ferocious" will perhaps characterize the faunal life more fully than any other single word can do. Nowhere else have I ever seen the animal life so fully provided for offense and defense as here. This statement applies to every class of the animal kingdom, but with special force to its smaller members. The tigers and tiger-cats, notwithstanding that they were frequent visitors to the camp, entering the tent and even during the last few nights of my stay the house itself, will endeavor to escape from man upon most occasions, but the fleas, jiggers, golofas, goropatas and mosquitos know neither fear nor rest in the region where we spent the most of our time. While some of the members of the party appeared proof against these insects' attacks, so that the creatures would crawl over without biting them, the most of us suffered greatly, while in some instances the never-ceasing strain upon the nerves, without respite of quiet sleep for days or even weeks together, was sufficient to seriously threaten even life itself, to make all other difficulties and hardships appear light in comparison and to render all enjoyment impossible, save such as could be derived from the pursuit of the many interesting studies which the region afforded. Every morning upon arising some time was devoted to digging the chigoes from the feet, chiefly from under the nails. One member of the party had nineteen of these creatures removed from one of his feet at a sitting. At another time twenty-four ticks were taken from the back of one of the members of the party. One member of the party was stung by a scorpion, and while they were narrowly escaped upon numerous other occasions, the entrance of poisonous serpents to our beds was not entirely unknown. Toward the mountains the most of the insect pests rapidly disappeared and there is every reason to believe that districts exist there which are entirely free from them, but at most of the points along the river they occasion a degree of suffering quite beyond the power of the imagination of those who have never experienced their effects. Not all of these insects annoyed us by their bites. A kind of beetle, similar to our June-bug, made its appearance after candle-light, so that eating or even sitting at the table became impossible when we were delayed in reaching the evening meal. Incredible as it may appear, we have watched the plates, the spoons and the candlesticks bearing lighted candles, as they were moved completely across the table and thrown upon the floor by the great numbers of these insects which formed a heaving mass underneath them.

Reference has already been made to the abundance of serpents as seen when they are disturbed by the inundation of their meadows. The forests are equally full of them. We would encounter them in the pathway; they climbed upon the trees and bushes, especially those overhanging the water; they were constant visitors to the camp, entering the tent or house, and they even lived in numbers in the palm-leaf thatch. Nine coral snakes were removed in replacing the roof of the house next adjoining ours. Occasionally while chasing rats and other vermin about through the thatch they will drop upon the floor or even upon the bed or table. Apparently a majority of these serpents are venomous and the constant anxiety of being on the watch for them plays no small part in wearing out the nerves of those living in such a region for the first time.

A very erroneous idea exists as to the harmlessness of the alligator, and it is strange that this should have been so largely promoted by writers on natural history. Not only are these creatures large and numerous about the delta, but they are very ferocious, and, especially during the hatching season, they are not slow in attacking man. Even the smaller members of the lizard family are in some cases reported venomous and certainly do not lack the disposition to attack human beings, as we ascertained by personal observation. No one is of course surprised to find ferocity among the reptilia, but it does appear strange to see the birds armed with sharp and powerful spikes upon the wings, and even with horns upon the head. Although the latter may not be used for offense, the former certainly are and constitute very formidable weapons. Birds of prey are exceedingly numerous in this region and have good reason for being well armed, for the objects of their attention are in many, if not in most cases fitted for making a desperate resistance.

Although these visible evidences of warfare are so conspicuous about the Lower Orinoco, it is beyond the reach of our ordinary observation, within the various waters of this strange region, that the most desperate conflicts are waged. Surely, nothing can exceed in interest the combination of provisions for rapid and changing movement and of offensive and defensive armament possessed by the animals of the streams and pools. The Maricot, the principal food fish there found, has a pair of tusks like those of the wild boar, some two inches in length, sharp and powerful, and these are supplemented by a set of powerful molars for heavy grinding. The "scissors-fish" has a cutting under edge to its pectoral fin, which closes down by a succession of notches, each holding the cutter at the point reached by each successive muscular contraction. The waters swarm with electric eels, though these are not nearly so dangerous as generally believed. The Carib-fish or Piranhau, with interlocking triangular teeth, massive head and jaws, and a ferocity which for vigor and persistence is equalled only by that of the bulldog in the entire animal kingdom, swarms in most of the pools and renders death practically certain to any one obliged to make his way by swimming for any considerable distance in a pool where they abound.

Concerning the botanical work performed, little can be stated in detail until time has permitted of the careful examination of the specimens brought home. About five hundred species were collected, the object being to obtain thirty-two specimens of each in order to supply correspondents, including most of the leading universities abroad as well as in the United States. When it is considered that there were but fifty-one days between the dates of arrival and departure, and that more than a week of this time was rendered unavailable owing to an accident, it will be seen that the collection of so large a number of specimens rendered the position of Mr. Squires and myself anything but one of leisure. Six hundred pounds of dryers were kept constantly employed, and this had to be handled at least twice, and when showers were frequent often many times daily, the sheets being taken from the drying plants, replaced by others and placed separately upon frames in the sun to dry. We were almost always at work with the earliest dawn and did not stop usually until a late hour in the evening. Our collection, however, is rich enough to make us well satisfied, even though it had cost us far more labor. Besides the herbarium specimens, thirty sections of tree trunks, some of them very large, representing nearly all the valuable timbers of the region, were obtained and are now being prepared for exhibition purposes. A Laurinaceous tree was encountered whose wood is very rich in an apparently valuable essential oil unknown to us. Several hundred pounds of this wood were brought home for examination and distillation. Specimens of Balata gum, obtained separately from the different species, are included in the collection. Several species and forms of Cephælis and Smilax were collected in abundance and in different stages of development. A number of plants yielding native remedies were obtained, although information of this kind was unusually scanty and difficult to obtain. A large collection of milky juiced plants was obtained. Last and not least among the objects of economic interest, is a form of Erythroxylon, almost, if not exactly identical with one which I previously collected at the junction of the rivers Beni and Madre de Dios, thousands of miles southwestward, and which I have always taken to be a forest form of the Coca-plant, escaped for many generations from cultivation. If so, the present collection must represent a very ancient cultivation of this plant at the mouth of the Orinoco, as it occurred quite wild in the forest and could by no possibility have made its way from the distant Andes by the transportation of seeds upon the river current.

A REAGENT FOR ALCOHOL.

E. Merck in *Chemiker Zeitnng* finds that even minimum traces of alcohol in aqueous solutions may be detected by molybdic acid. The sensitiveness of this test extends for ethyl alcohol to 0.02 per cent., and for methyl alcohol to 0.2 per cent. Molybdic acid is dissolved in concentrated sulphuric acid, and the solution thus obtained is stratified in a test glass at about 60° below the liquid under examination. At the surface of contact of the two liquids there appears a distinct blue ring, the intensity of the color varying with the amount of alcohol present. On shaking, the blue zone disappears, but reappears on the addition of more molybdic acid. The reaction is not specific for alcohol.—*Chem. News.*

SHALL DOSES AND SOME OF THE NEW SYNTHETIC REMEDIES BE INTRODUCED INTO THE NEXT U. S. PHARMACOPŒIA ? *

BY CHARLES RICE, Ph. D.

It may be regarded as quite certain that at the next Pharmacopœial Convention, to be held at Washington in May, 1900, two subjects will particularly engage the attention of the delegates then present, namely, the question of the introduction of doses and that of the admission of some of the new synthetic remedies. It is not too soon to discuss these topics now. Indeed, it is necessary to begin their discussion at once, so that during the next few years, the delegates to each annual meeting of this Section of the Association may report back the discussion to their constituents, in order that the latter may present counter arguments at the next meeting, if they so desire, or signify their approval of the propositions.

Before turning to the topic proper, a few words on the subject of certain criticisms made regarding the last United States Pharmacopœia may not be out of place here. After the work had appeared (in August, 1893), it was subjected to review and criticism both in this country and in Europe, and, while competent critics were able to point out certain minor errors and defects, yet, on the whole, the general verdict was one of commendation and approval. Among the medical critics in this country there were a few who found fault with the work because it contained, according to their views, too many drugs and preparations, or because it contained "a confusing multiplicity" of preparations of one and the same drug. Regarding the first mentioned criticism, it should be remembered that the Pharmacopœia is designed to meet the requirements of the whole country, and not merely those of some special section. From the standpoint of a single individual, whose experience is confined to his own neighborhood, the criticism may seem justified. But when the diversity of climate, race and nationality, habits, temparament, soil and natural resources in the different sections of this country are taken into consideration it should not be surprising that the customs and preferences of prescribers differ. Since the Pharmacopœia is to serve as a guide to the pharmacist to enable him to supply remedies of a standard and uniform character, it follows that the work should contain everything for which there is a legitimate demand in any section of the country; and above all, every remedial agent frequently prescribed by the majority of physicians. No doubt, the Pharmacopœia, in its present shape, contains many preparations which are comparatively, or altogether, unused by the profession in some sections of this country, while, on the other hand, they may be largely used in other sections. It is one of the duties of the committee of revision to ascertain, in the best way it can, what drugs and preparations are sufficiently in use throughout the country to justify their introduction into the United States Pharmacopœia. The last committee of revision considered this matter quite carefully, and decided according to its best judgment, following the principle that it is better to retain any drug or preparation already official, rather than to dismiss it upon trivial evidence. At the next revision in 1900, it will, no doubt, be possible to make a more thorough weeding-out, because more reliable statistics as to the frequency of use of the various articles now contained in the Pharmacopœia will then be available.

---

* Read before the Section on Materia Medica and Pharmacy of the American Medical Association, at the Atlanta meeting.

Some of the medical critics point to the numerous preparations of one and the same drug, for instance, of opium, iron, mercury, etc., as being a "useless burden" on the memory of students of materia medica and on that of incipient practitioners. But they forget that the Pharmacopœia is not designed as a text book of materia medica for students of medicine, each teacher of therapeutics having the right and privilege to advise his hearers to disregard those pharmacopœial articles which he may deem unimportant or useless. In other words, each teacher of materia medica or therapeutics has the opportunity of putting before his students a Pharmacopœia of his own construction, which will, no doubt, be quite limited in extent. And here it may be safely asserted that if every teacher of materia medica in this country were to produce such a work representing his own ideas, an examination of all these works would show that the views of the authors on the value of many remedies are widely varying. On the other hand, it would show that all of these works, without exception, would contain uniformly, many remedies used and approved by the authors, which are not contained in the Pharmacopœia at all.

While the construction and periodical revision of a Pharmacopœia must be the joint work of the medical and pharmaceutical professions, if it is to bear the authoritative stamp which it ought to possess, the finished work is of far more importance to the pharmacist than to the physician. To the latter it is mainly of interest only in so far as it tells him what drugs or preparations of any drug are official and therefore surely available to him, and what their strength is. To the pharmacist it is of primary importance, as he has to work by it to produce the remedies which the physician requires. It is certain, however, that the work would be more frequently consulted by the physician, and be of more practical value to the pharmacist, if it gave information concerning the average doses of the several articles. The absence of doses has frequently been complained of, and is really, one of the most serious obstacles in the way of a more general popularization of the work. However, as is (or should be) well known, the charge of wilfully omitting the doses can not be laid at the door of the Committee of Revision, because the latter was distinctly ordered by the Pharmacopœial Conventions both of 1880 and 1890 not to insert doses in the Pharmacopœia. The blame if there be any, must be shouldered by the medical profession, whose representatives deemed the introduction of doses unwise, because liable to create the impression that any overstepping of the limits of the dose laid down in the Pharmacopœia, even though it may have been justified and necessary in the judgment of the prescriber in any particular case, might lead him into trouble. It is believed, however, that there is no good reason to apprehend such a result. It would be very easy to choose such a phraseology in the passages referring to doses as would leave the prescriber at full liberty to adjust them at his discretion.

While the introduction of doses into the Pharmacopœia could easily be effected without creating any risk to the prescriber, there is, however, another and more serious obstacle in its way, and that is the diversity of opinion prevailing among the authorities in therapeutics as to what *are* the average doses of the several remedies. Yet even this difficulty can be overcome, provided only that the medical profession at large will consent to at least authorize their representatives on the committee to act for them in this matter. It is a principle accepted and followed by the present Committee on

Revision—a principle which testifies to the spirit of harmony existing between the professions of medicine and pharmacy—that any purely medical and therapeutical matters are to be decided by the medical members of the committee, even though they should form a numerical minority. It is therefore understood that the preparation of the list of doses, and the phraseology of the respective text, would be left entirely to the medical members. It seems certainly worth while trying to ascertain whether an agreement on doses can be arrived at among the medical members of the next Committee of Revision. But to make the experiment at all, it is necessary that the medical members be at least authorized or permitted to do so by their constituents. Possibly nothing may come of it even then. But the writer of this paper shares the opinion of many others, physicians as well as pharmacists, that the insertion of doses in the Pharmacopœia is perfectly feasible, and will have to come sooner or later. One of the first questions which occurs to the prescriber or dispenser of a remedy with which he is not perfectly familiar is its average dose. For this he will have to turn to some other work of reference. Why should he not find the information sought in the book which is his authority for all other matters concerning the more important remedies in use?

It has been stated above that works on materia medica and therapeutics, written by any leading authority on these subjects at the present time, would or do contain many remedies approved and used by the authors themselves, which are not contained in the Pharmacopœia. Since the introduction of the synthetic organic antipyretics, hypnotics, antiseptics and other valuable new remedies, a large proportion of the teachers' text-books and of the students' note-books is taken up by the facts and information relating to these remedies; and the literature relating to them, as any one may learn by referring to the Index Catalogue of the Surgeon General's Library, far exceeds in some instances that which treats of well-known older remedies used for generations in the past. At the time the sixth Decennial Convention for revising the Pharmacopœia met, in May, 1880, only a few of these synthetic remedies had made their appearance, and none of them had become sufficiently established to find advocates for its introduction into the United States Pharmacopœia. With the beginning of about the year 1884, however, the importance of some of these remedies became more and more recognized, and the financial success following the introduction of some of them gave a new impetus to synthetic research, which was in many cases again rewarded by large profits. In 1890, the position which some of these remedies occupied was already so important that strong pleas were presented to the Pharmacopœial Convention in favor of their official recognition, but the spirit of conservatism and a sense of reluctance to put the stamp of approval upon articles which were protected by patents, trademarks or other proprietary rights induced the Convention to instruct the Committee of Revision to refuse them admittance. Since that time the number of these articles has constantly increased, and will still further and more rapidly increase as the century approaches its end. Shall we permit ourselves to be instrumental in bringing about a condition of affairs when the physician and pharmacist will have to seek for information regarding the remedies most generally used in other books, outside of the Pharmacopœia? Is it not time to inquire whether the conditions connecting these remedies with the patent and copyright laws are of such a nature as to place them beyond the ethical boundary? Surely if the large majority of medical practitioners in this country does not deem it objectionable to prescribe such drugs as phenacetin, antipyrin, sulphonal, aristol, salol, homatropine, etc., etc., are we not justified in considering the supposed ethical barrier as broken down? These articles stand on a basis entirely different from that which is occupied by the ordinary proprietary nostrums, the composition or mode of preparation of which is kept secret. These new synthetic remedies have not even the shadow of secrecy about them. Their exact composition, chemical and physical properties, mode of preparation, reactions, etc., are thoroughly known, and controllable by tests or assay. The only peculiar feature about them is this, that those who discovered them, usually after the expenditure of years of labor and study, and after risking a large amount of money, retain such control over them as insures to them a fair return for their labor and outlay. There is a positive advantage in the fact that most of these synthetic products are manufactured only in one place, by persons entirely familiar with the various processes, and always under the same conditions. We thus have a better guarantee of their purity and uniformity than if they were prepared promiscuously by any one who chooses to undertake their manufacture. Competition, the enemy of prime quality, would soon make itself felt by the deterioration of many of these products, as they would appear on the market. Foreign Pharmacopœias have long recognized and admitted a number of these synthetic products, either under specially coined names, or under those by which they are universally known and sold. There is no advantage gained by coining for them new names, for the latter will but rarely be used in actual practice, and they are merely chosen to leave, as it were, a back-door open, in case any one who defends their introduction into the Pharmacopœia should be hard pressed for arguments. The plain honest way—to call them by their common names—is the best. Had the last, (that is, the present) Committee of Revision known in time that salol was one of these very articles, the manufacture and name of which were protected by proprietary rights, the article would certainly not have been admitted into the Pharmacopœia. It was only after the appearance of the work that the committee learnt the facts relating to it. Since salol is now in the Pharmacopœia, it is safe to presume that it will remain there, even under its present copyrighted name. And if salol is to remain, why not take this as a precedent and introduce such other synthetic remedies as will be found to have survived ephemeral fame and really to merit recognition, when the time of again revising the Pharmacopœia shall have arrived?

The two themes which the writer would suggest as worthy, among others, of consideration, and regarding which it is very desirable to obtain the sense of the medical profession, are the following:

1.—It is proposed that the next Committee of Revision shall be authorized to state the average doses in connection with each drug or preparation used internally. The doses shall be designated by a sub-committee consisting of those members who are practitioners of medicine, and shall be given in such forms as will leave full liberty to the prescriber to exceed the limits given.

2.—It is proposed that the next Committee of Revision be authorized to introduce into the Pharmacopoeia any compound or preparation whose composition, properties and mode of manufacture are known, and whose identity, purity and strength can be ascertained by tests, irrespective of any proprietary rights that may be connected therewith.

CHEMISTY AS A GENERAL EDUCATION*

By Peter T. Austen, Ph. D., F. C. S.,
Professor of Chemistry, Brooklyn Polytechnic Institute.

The parent who finds his boy rapidly growing into manhood, and who has realized, through a more or less unsatisfactory, if not a stringent experience, how little his own education has enabled him to grapple with the real problems in his life, asks himself many questions about the nature of his boy's studies. Will they fit him for real life? Will they enable him not only to use his powers to advantage, but to realize to the fullest extent the opportunities that may present themselves during his journey through life? The parent, if an educated man, knows full well the value of special knowledge. But he also knows that goods may have but little value if the market is overstocked, that pyrites may be mistaken for gold, and that a shotgun does better work with small game than the finest rifle.

If the boy shows a marked fondness and aptitude for chemistry the problem is not a difficult one to solve. Make a chemist of him. That men may study chemistry and fail as chemists cannot be denied. A vocation in which all succeeded could not be called a profession, and the profession of chemistry is not an easy one. It requires, aside from the ability to observe and compare accurately, as much, if not more, varied knowledge than any other. This is especially true of chemical engineering, in which not only chemical knowledge, but an acquaintance with mechanics, electricity, heat and steam, as well as an understanding of the art and science of manufacturing, and not a little else is called for. But in a country that has such vast resources as this, one which is destined in due time to be the supplier of the world, there will never be a lack of opportunity for chemists of the right sort.

And even now, and for some years past, the demand for well educated young American chemists seems to have been in excess of the supply. I do not mean that a young man who has had a short course in analytical chemistry and a meager drill in general chemistry can expect to find a dozen places awaiting him, although it is surprising how often such young fellows do succeed in starting off. I mean that a young man who has had a thorough training in the science and art of chemistry will find his opportunity if he seeks it energetically and persistently, and does not demand the whole surface of the earth and of the celestial dome for the field of his first activity in practical work.

THE STUDENT AND THE MANUFACTURER.

It is not a little interesting for one who has been a teacher of chemistry for a number of years to watch the progress of his students after they enter their profession, and to note what different paths they follow. Aside from chemical manufactures proper, almost every manufacture, after it reaches a certain magnitude, requires a chemist, or at least a man with some chemical knowledge, for it deals with various kinds of matter, most of which demand analytical examination or comparative testing to determine their composition and value. Most manufactures consist in converting some kind or form of matter into some other kind or form. Here, again, the chemist is called on to study the principles involved, to remedy faults, to improve and invent new methods and products. And, when waste products begin to accumulate, the chemist is again called upon to find methods to utilize them or dispose of them. I might write many pages about the manifold nature of the demands made on the chemists by the manufacturers. The coal has to be analyzed, else it may fall below the standard guaranteed, and the steam will cost too much. The lubricating oils need continual testing The water scales the boiler, and the coal bills increase enormously; it must be purified. Adulteration, sophistication and other forms of commercial dishonesty so commonly practiced are kept in check by the chemist. In many manufacturing processes every step is controlled by analysis.

In the Agricultural Experiment Stations hundreds of chemists are continually at work analyzing fertilizers, milk and farm products. Soils are examined, and live-stock, and what they eat and eliminate are analyzed. The Boards of Health and the Geological Surveys also keep a number of chemists busily at work. In the iron and steel industries a swarm of chemists test and analyze the raw materials, the substances in process of manufacture and the finished products. Metals are sold on certificates of analysis. In the packing industry, lard, oil and many other products now pass through the hands of the chemist. In the textile industries the dyes are tested; fabrics, mordants, sizes and what not are examined. Many railroads have their own laboratories, and buy material on specifications made out by skilled chemists. No manufacturer knows the whys and wherefores of success and failure of the processes as well as the chemist; on him falls largely in the struggle of competition the responsibility of saving the industry. And, if he combine both chemical and mechanical abilities, he may develop and superintend a great manufacture, improve its processes, invent new methods and new forms of apparatus, and successfully conduct an immense industry.

---

*A paper read before the Student's Chemical Society of the Polytechnic Institute, November 4.

CHEMICAL EDUCATION A BUSINESS QUALIFICATION.

Thus it is not only in the laboratory that the chemist finds occupation, but also as manager or superintendent of the works. And again, who is so competent to enter the business department of manufacture as the chemist, who is familiar with every detail of the properties and production of the article bought and sold? Who can sell them as well as a chemist who has the selling faculty, and who knows much about them that no one but a chemist can know? Hence many a chemist finds his way into a responsible business position.

It goes without saying that in every town of any size an analytical chemist will be found. In large cities the profession of analytical chemistry covers a wide field, and in many cases develops an elaborate organization, employing a number of assistant chemists and skilled workmen and doing a business well up in the thousands.

It is a fact, which is perhaps not fully appreciated, that the most difficult part of a business is not the manufacturing but the selling of the goods. In organizing a manufacture, skilled and able engineers, superintendents and chemists, book-keepers and the best of labor are engaged. Experienced and adroit men are placed in management of the business. But all of these are not more difficult to obtain than successful salesmen. It is unnecessary to say that a manufacture cannot be carried on unless the products can be sold. Men who are intelligent, tactful and well-educated, and who thoroughly understand the articles they sell, are not easy to obtain. In this matter an important change is working itself out in this country. The ignorant and blatant salesman, ready to bribe the prospective buyer or his employees if he could, and to dispose of the poorest goods at the highest price, was common in former years. While this state of affairs still continues in some branches of trade, it has to a great extent been corrected as regards the selling of articles that can be tested chemically, and when it can be shown by experiment which one of several articles gives the best result for the money. Large concerns have of late years taken graduates from the leading scientific schools, educated them in the business, and, if they have developed mercantile ability, have put them in the sales department. The results, so far as I can find out, have been surprisingly good. But out of a considerable number of young men only a few develop the gifts and qualities of the successful salesman. Others who have been trained in the manufacture find places for their activities in the manufacture or in the business. From requests sent me by large concerns for bright graduates to work into their sales departments I judge that this movement is on the increase, and it certainly will afford the young chemist an additional opportunity for activity.

I should not omit in this category the profession of teaching. In recent years the development of scientific education, both in colleges and schools, has been very great. There are few colleges of any standing that have not a course, or elective in chemistry; and school courses in experimental chemistry and elementary analysis are becoming more and more common. Many young chemists find in them most fruitful opportunities for activity and development.

HELPFUL IN ALL PURSUITS.

But it is my particular object in this paper to speak of the study of chemistry as a liberal education for those who do not intend to become professional chemists, but who may enter mercantile business, or other vocations not chemical, in which this education may not at first glance appear of any practical use.

In some of the professions, indeed, it is of the first importance. For the physician a thorough knowledge of chemistry is absolutely necessary if he would know the nature of the remedies he administers, and understand the change and the products involved in the living organism. He must be familiar with physiological chemistry if he hopes to attain his due measure of success. The lawyer finds that in cases dealing with manufacturing processes, nuisances, patents, mines, commercial products, in certain criminal cases and numerous others, a knowledge of chemistry is obligatory. This knowledge, I may add, is most difficult, as a rule, to attain late in life. And not only the physician and the lawyer, but some theologians whom I know would be greatly benefitted by a fuller understanding of chemistry.

When I speak of chemistry as an education I particularly wish not to be misunderstood. The student in chemistry is not to slight the broad foundation on which all education must be based. His education in mathematics, grammar, history, languages, metaphysics, psychology, natural sciences, etc., must be full and thorough. His physical training must be carefully attended to. He will have to spend more afternoon hours in the laboratory, and less time in sport, and hence he may have to take especial care of his body. But experience proves that young men are able to do this, study and still keep in the best of health and spirits and be able to utilize the months of summer vacation to their fullest extent.

BENEFIT OF LABORATORY STUDY AND TRAINING.

This leads me speak of the first benefit to be derived from a course that demands work outside of the usual recitation and lecture hours, which is an experience in self-denial. We have about so much time alloted to us in this life. We cannot have all of it for both work and play. Chemical study and experiment take time. The unfinished experimental work cannot be hastened or crammed. It cannot be evaded or dissembled. It cannot be dishonestly made up. The happy guess does not assist it. An examination cannot replace it. If it is to be really done the brightest mind cannot escape devoting a considerable amount of time to it. Something may have to be given up for it; it may be the athletic field, the theatre, the social gathering; in any case one must deny one's self something. And very large does the sacrifice often appear to the young man. I do not undervalue recreation. But to enjoy recreation fully it must be contrasted with work. And one of the first things a man must learn, would he be successful, is that in order to do a few things well he must deny himself many pleasures; sometimes even what he may consider necessities. Then slowly but surely, he begins to realize the fact that time is his main capital. He perceives the necessity of steady, untiring and persistent daily work, which genius may illumine, but cannot replace. He learns to appreciate how limited is the time at his disposal, when the hours for sleep, meals, social duties and necessary rest have been deducted. But his self-denial brings a sure reward. His growing knowledge of matter, its properties and its changes, his beginning insight into cause and effect, his experience in acquiring a mastery over certain kinds of matter and making them subject to the power of his mind and skill, awaken in him new and indescribable feelings. As his laboratory work goes on he becomes acquainted with the properties and behavior of many kinds of matter. He acquires skill in manipulation and construction. He works with poisons and explosives, and learns caution. No amount of reading or attendance at lectures can take the place of this knowledge acquired by personal observation and practice. But, on the other hand, the education by reading and lecturing should not be curtailed. Each has its proper place, and neither can be ommitted from the curriculum of the course. He forms higher ideals about what it is possible to get out of life. He begins to measure men by new standards and to acquire a better appreciation of those who mould humanity, to whom the progress of civilization is so largely due, and to whom mankind is so deeply indebted.

The lesson that duty to one's self and mere pleasure are in continual conflict is an important one for a young man to learn, and it is rarely learnt or realized until he has come in actual contact with practical life, and has tried to draw interest on a capital perhaps greater than he really possesses. But the lesson once learnt leads a man to find pleasure in his work, and adds a zest to recreation. I may add that I doubt if hard work ever hurts anyone very much. It is worry and anxiety that tire men out.

CHEMICAL COURSE AND ITS RESULTS.

In order to make my theme easier to follow by those who may not be familiar with the character of a chemical course, I will consider some of the results obtained by the study of the various subjects, taking them up in the order usually assigned them in a course of chemistry.

The course generally begins with practice of experimental chemistry accompanied with suitable instruction in the lecture room. The student studies the properties and behavior of matter experimentally, training his faculties of observation in a way unapproached, I believe, by any other subject. The form, color, odor and taste of the substances are observed and noted. Their behavior under certain conditions is carefully studied. Questions are put which must be worked out experimentally. Not only are the faculties of observation developed and trained, but an education of the greatest value is given in accuracy of thought.

Not a few of the people one meets ordinarily are neither entirely honest nor by any means accurate. Both their honesty and accuracy are more or less befogged by ignorance, credulity, prejudice or self interest. Neither does the average individual observe accurately. He seldom sees much that he is not looking for and his observations rarely contradict his expressed views. To such a man, a course in experimental chemistry, even if taken late in life, is of value, if it effects nothing more than to compel him at certain times to get near to facts.

Another valuable element of this form of education lies in learning by experiment the protean changes which matter suffers when subjected to different conditions, and the exactness of the working of the laws of nature. This compels a close attention to the conditions under which the phenomena are observed. The student is impressed by the changes that matter may suffer on the alteration of a single condition,—perhaps a condition apparently so insignificant as to escape notice by an untrained observer. The danger from loose generalizations is made manifest, and also the dishonesty of reasoning based on partial and unfair selection of facts. Plutarch tells us of a public man named Annius, who had no great repute for justice or temperance, but who was famous for confusing honest men by adroit argumentation. The study of physical science would never produce an Annius.

Training in manipulation is another important feature in the laboratory work. It is painful to see how clumsy-handed many young men are when they begin their laboratory work. As most of the apparatus has to be put together by the student, cocks which do not fit tight, glass tubes which are not bent just right, and other numerous details have a crucial effect on the results of the experiments. It is sometimes amusing to witness the rage, but ill concealed, that often accompanies—especially if he has an absorptive, rather than a productive mind—a young man's dawning perception of his inability to do a simple thing. That he can decline cork in four languages does not enable him to keep the cork-knife in the cork and out of his flesh; nor does his knowledge of the mathematics of a cylinder enable him to cut one out of cork which will fit tight and deliver the contents of the flask into the receiver rather than over his face. The education in manipulative skill is not to be undervalued. I have not a word to say against languages and mathematics. The more a student can get of both of them the better, always bearing in mind that the value of a man depends not merely on what he knows but on what he can do. But a man who can handle only a pen is poorly equipped for the actual life of the present day.

INFLUENCE OF QUALITATIVE ANALYSIS.

In the various branches of Qualitative Analysis we have a form of mental training with which I know of no other to compare. It seems to stand alone. The student learns the properties of the commoner elements and their compounds by experiment, and by these properties he recognizes them. But, as many of these properties are not observable when several substances are mixed together, it becomes necessary to separate the substances systematically. The methods used for this purpose are models of ingenuity. The study of qualitative analysis demands a large amount of exact observation, and the retention of this knowledge in the mind. The facts thus acquired must be compared, and some common property used to make the broad groupings; these are again and again subdivided on the same principle, until the substances can be detected with certainty. The element of exactness in work is further developed by the study of this subject. The separation of the various substances from each other has to be done with great care and thoroughness, else the results will be uncertain. In this procedure keen observation, careful comparison and clear reasoning are demanded, and the facts must be obtained by the student himself. This dealing with facts is of great importance. If he fails to observe exactly, if he overlooks some property of the substance he is examining, or is careless or slovenly in his manipulations, his results will be inaccurate, and a considerable amount of work may have to be done over again. After a while a respect for his own work is developed. For every step and operation there are reasons, and to explain these a good deal of study is required. All the time he asks: "What substance is used? How is the operation performed? Why is this done?" Important facts are recognized by small clues. The mind and faculties of observation of the student are kept constantly alert and at work. It marks an important point in the education of a young man, when he is able to demonstrate by experiments made by himself that he is exact. It involves the elements of personality and independence. To know that he is able to ascertain the composition of many of the innumerable forms of matter about him brings him into closer touch with nature. There is a sense of power in this knowledge which is hard to describe, and yet it can often be discerned.

I believe it is a common and natural quality in young people, and by no means eradicated in older people, to deceive themselves about the quality of their knowledge or their abilities. It is one of the most important objects in teaching to so inspire the young that they may keep in touch with the work of great minds, and yet not get discouraged at the weakness of their own efforts.

Young people are quick to perceive how easy it is to humbug others about their attainments and abilities. Having more or less by instinct deceived others about one's ability, it becomes still easier to deceive one's self about it. The exact work in the chemical laboratory is an excellent antidote to undue self-esteem. The properties of matter and the laws that control matter are capable of demonstration by anyone who is sufficiently skilled, and any exaggeration, any inexact statement or false conclusion about them is easily disproved. This is so soon learnt by the student that it cannot fail to exert a beneficial influence upon his character. It is easy to deceive our fellows—at least for a time. It is impossible to pervert or deceive nature.

VALUABLE LESSONS IN EXACTNESS.

In the study of Quantitative Analysis the student determines by means of processes conducted with great delicacy and exactness, and weighings made on scales of extreme sensitiveness, the amounts of the various constituents of a substance. In this work every speck of matter counts, and a loss of the minutest amount renders the results valueless. The study of quantitative analysis has a remarkable effect upon a careless lad. To have his work represented by figures assigned by himself is a new experience to him. The delicate but relentless needle of the balance reveals not only the inaccuracy of the work but the lack in the youth, His self-esteem is often deeply wounded ; even his social standing, wealth and popularity are scored by the balance. It is the instrument of exactness. It records one's defects. It cannot be cajoled, bullied or deceived. One may sing to it, declaim before it, implore it, offer to bribe it, but to no purpose. It indicates in figures one's ability to perform operations, for the most part simple, with exactness. I have seen careless boys, who were bright enough to get along in their studies without any injury to their health, manifest extreme surprise when the balance announced their inability to attain exactness. Further surprise and considerable chagrin I have seen displayed when the balance has pointed out an attempt to be dishonest and "cook" results. I recall a remark made by a very bright but extremely careless young fellow (now a most distinguished physician). "The needle of that wretched balance," said he, "is like an immense bee's sting. Every time I go to it some cherished quality is pricked." I really think that the balance was the first real check that that boy's self-esteem had received. Carelessness is often an indication of self-conceit. He was a fellow, however, who was at once aroused by an obstacle, and so before he finished his work in quantitative analysis he had acquired an exactness which was most satisfactory. His other work, and the young man himself were powerfully influenced by it. I have had students in quantitative analysis who became so irritated at their failure to obtain exact results that they gave up even football in order to practice the manipulations involved in the analysis.

TEACHING IMPORTANCE OF DETAIL.

In all analytical work there is an element which I consider of the highest importance, and that is practice in the organization of work and division of time. By skillful arrangement of the numerous operations a great deal of work can be done in a given time, and yet with little danger of confusion. This is an excellent training in executive management. One also comes to appreciate the importance of the small detail. Young men are often inclined to underestimate the full value of what appear to be minor details. Experienced men know that success is largely owing to punctilious attention to little things. Again, in quantitative analysis every speck of matter must be accounted for. This principle pervades the universe. Its application in a man's work results in thoroughness, and demands most patient and persevering application. Few young people appreciate quite fully how very hard the men work who achieve success in fields of intellectual labor.

Probably the greatest cause of failure

in men is the inability to attain self-control. Without it an intellect is of as little use as a steam-engine without a governor. In ordinary school education far too little attention is paid to developing and training this most important quality. The brighter a man is intellectually, and the stronger physically, the greater appears to be the danger from imperfections in self-government, and the inability to concentrate himself on a subject. There is no doubt that while the ability to control one's self gives one an enormous power, it is a quality whose development offers great difficulties. I am far from claiming that any one study can enable a man to acquire this attribute, but I believe that certain kinds of laboratory work are of great benefit in developing it, because such work so clearly shows how easily failure follows the loss of self-control, or in the inability to concentrate one's self upon work.

In the preparation of pure chemicals, the student gains an impressive knowledge of the wonderful exactness with which matter obeys physical laws. The growth of a crystal is revelation. And here, again, failure to bear in mind the smallest detail vitiates the result; analysis proves the substance to be impure and the work a failure. In thus dealing at first hand with nature, cause and effect stand out clearly. The work and the results are one's own. No amount of self-adulation or excuse can make the substance any purer, no adroit quibble or misrepresentation can deceive a chemist about it.

FROM EXPERIMENTING TO ORIGINATING.

In the various branches of analytical work, the student has a constant opportunity for originality. Much of school education consists in the reception of knowledge, as it naturally must, but it is to be regretted when some original thought is not aroused by the knowledge imparted. In chemical work questions continually arise, to answer which more or less experiment is called for. Each experimental fact indicates many possible experiments, so that under wise guidance the student is led to question nature. To do this he must devise experiments, select or plan apparatus, originate expedients, and observe and compare phenomena closely. In this way he gets not only valuable practice in avoiding, removing or clambering over obstacles, but his mind gets some training in the application of knowledge, and soon shows signs of becoming productive. It is one thing to absorb knowledge and become encyclopedic, and it is quite another to assimilate it and to bring it to bear on a given subject. The difference between the absorption and assimilation of knowledge is not always appreciated in school education. Power does not consist in the possession of knowledge, but in the ability to use it. In laboratory work a constant application is made of the knowledge gained by study and a continual demand is made for more. A simple phenomenon will often exhaust the student's knowledge long before he has offered a satisfactory explanation of it. In this way knowledge becomes suggestive and stimulating, and an important force in the development of a mind. The student gets a clearer idea of his mind's strong and weak points. There are few of us who do not know what we can do well, but it is very hard to have to admit that there are certain ordinary things which other people can do better than we —even people of whom we may think but little. But the sooner this is understood the better for us. No man can hope to be respected by others who does not respect himself, and to respect one's self one must be honest toward one's self, which is harder than being honest toward others.

IN TOUCH WITH THE TOILERS.

The study of Applied Chemistry brings the student for the first time into intimate contact with the great manufactures. He learns how a few simple chemical reactions may become the basis of an immense industry. He begins to understand how laboratory reactions are carried out on a large scale, and to appreciate the wealth of mechanical ingenuity that is bestowed on them. He gets some idea of the elaborate organization of a manufacture. He appreciates the loss involved in waste products, and discerns the close relations that may exist between side products. He visits large works and sees the men toiling at their tasks, sees thousands of horse-power of energy guided by a boy's hand, sees many tons of material speeding through the course of manufacture. He appreciates the immense power of capital which can build the costly plant, and of the still greater power of the brains that can solve the numerous problems and control all the intricate machinery of production and disposal. He is surprised and impressed by the perfection of the organization, how the work is divided and subdivided. He discerns the connection between chemical progress and human progress, and understands that Weldon's utilization of the waste liquors in the manufacture of chlorine made bleach cheaper, books cheaper, education cheaper. He grasps the idea of the tremendous importance of the chemical principle made a fact by the genius of the mechanical engineer and a thing of life by the skill and adroitness of the business man. And, when he ponders on all of these things he may see, more clearly than he has yet, the irresistible power that may be exercised by the human mind.

WONDERS AND ACHIEVEMENTS OF CHEMICAL SCIENCE.

In the study of Organic Chemistry the marvellous ingenuity of nature is illustrated in a way that is startling and impressive. With a few elements many thousands of substances are constructed, all differing in properties. The subtle ingenuity and inventiveness of nature manifested in this realm surpass in some ways anything found in other branches of science. Its wonderful atomic architecture, the infinity of kaleidoscopic changes of structure of which the compounds are capable, the astonishing and almost creative power that a knowledge of this science has given to man at first bewilders and then exhilarates the mind of the student. Its study cannot fail to assist the development of ingenuity, originality and independence of intellect.

Through organic chemistry the phenomena of life must be approached. The principles of development and degradation observed in living objects have been mostly studied as to external form and internal structure, and as yet little has been done to study the chemical relations and changes involved. The various species of a plant genus often produce compounds closely related. Substitution, isomerism, synthesis, analysis and atomic migration are all included in the growth of a plant. Who can say what wonders will be discovered when chemistry turns its search light on this field of silent activity.

It would take me too far from my theme to dilate on the advantages to be derived from a study of higher chemistry and its mathematical consideration. The student who studies chemistry as a liberal education can hardly expect to go as far as this, unless he can devote a post-graduate year or two to it. A year devoted to rounding up a course is always advisable when possible, but it is not always possible.

I cannot refrain from speaking of the value of a course of reading in the history of chemistry. It is hard to appreciate the enormous debt that our modern civilization owes to the development of chemical science, the discovery and application of chemical facts. In agriculture, manufacturing and medicine, in the increase of our personal comforts, in fostering health and resisting disease, in reducing the cost of living, in augmenting the thrift and happiness of communities, in a better understanding of the failures and successes recorded in history, in the increasing ability to apply knowledge, in the development of a science of economies, in learning the relations between cause and effect and the accountability of matter to law in appreciation of personal responsibility—in all these things, and in others too numerous to mention, the influence of chemistry is clearly defined. The student cannot fail to understand how strongly and how beneficially a knowledge of chemistry will influence his own life—how much he will miss and how much he will discount his own activity if he has not a fair knowledge of it.

I am not now aiming to discuss the different studies of a chemical course but to consider the characteristics of chemical study in general, and their effects on the student's mental development and character. The more detailed consideration of the work and study demanded in a chemical course would carry me far beyond the limits of a paper of this kind. It is evident, however, that all through life a man has to deal with the material objects about him; it may be to utilize them, to protect himself against them, or to appreciate their part in nature. It follows that he should have as thorough a knowledge as possible of the nature and properties of the matter of which these objects are composed. This knowledge cannot be obtained by mere attendance at lectures, no matter how well they may be experimentally illustrated, or by the reading of books. Experimental work with the typical forms of matter done by the student himself is demanded, and the acquisition of this direct knowledge powerfully and beneficially influences the student's mind and character, as I have endeavored to indicate. For these reasons I am convinced that a young man who does not intend to make chemistry his profession, but who expects to devote himself to mercantile pursuits, will find a course in chemistry, laid out on a broad basis of general education, the best preparation.

THE Alumni Journal

Published Monthly under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. AUGUST, 1896. No. 8.

SUBSCRIPTION:

Per Annum, . . . One Dollar
Single Copies, . . . 15 Cents.

All communications relating to subscriptions for the Journal, should be addressed to Nelson S. Kirk, 9 East 59th Street, New York City.

All communications intended for the Editor, original contributions, exchanges, books for review, etc., should be addressed to
Alfred H. Mason,
59 Maiden Lane,
New York City.

All communications relating to advertisements or to the business of the Journal, should be addressed to
Thomas M. Davies,
543 Third Avenue,
New York City.

All copy for publication, (written on one side of the paper only), or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

EDITOR PRO TEM.
ALFRED H. MASON, Ph. C., F. C. S.
CONTRIBUTORS:
Alumni Association,
WM. HOBURG, JR., PH. G., 115 West 68th St., New York.
Alumni Notes, Socials, etc., and Classes prior to '93.
GEO. F. BURGER, PH. G., 115 West 68th St, New York.
Bibliography,
ADOLPH HENNING, PH, G., 68 William St., New York.
Class of '93.
EUGENE F. LOHR, PH. G., 375 Third Ave., New York.
Class of '94.
NELSON S. KIRK, PH. G., 9 East 59th St., New York.
Class of '95,
B. DAUSCHA, PH. G., Caldwell, N. J.
Class of '96,
I. HOSTMAN, 204 Bowers St., Jersey City, N J.
Class of '97,
Q. E. D.
Legal Notes,
H. A. HEROLD, 34 Pine St., New York.
Post Graduate Class of '96,
HARRY B. FERGUSON, PHAR. D., 90 Maiden Lane, N. Y.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

OUR readers will be glad to know that Prof. H. H. Rusby has survived the perils and dangers of his Orinoco exploration and arrived safely home with a great store of specimens, etc. His usual thoughtfulness for the ALUMNI JOURNAL enables us to be the means of communicating to our readers some of his experiences, and a preliminary announcement of some of the results of his labors.

THE Forty-fourth Annual Meeting of the American Pharmaceutical Association will be held at Montreal, Canada, August 12th to 26th. A most attractive programme has been arranged for by the local committee of entertainment, and matters of great importance will be brought forward for consideration and discussion in the different sections. Caswell A. Mayo, 66 West Broadway, member of the Transportation Committee, New York, will gladly give information in regard to routes, etc. William M. Massey, Professor Coblentz, Professor Rusby, Benj. T. Fairchild and Theodore Louis are delegates from the College. The Alumni Association delegates, are reported page 182.

DR. JOHN ATTFIELD, F. R. S., Ph.D., honorary member of the C. P. C. N. Y., has recently resigned the position of Professor of Practical Chemistry in the School of Pharmacy of the Pharmaceutical Society of Great Britain. He has held the professorial chair for thirty-four years. Dr. Attfield is best known to pharmacists from his "Manual of Chemistry," which has been the text book of successive generations of pharmaceutical and medical students, and for his work on the "British Pharmacopœia," of which he is editor. He is succeeded in the professorial chair by Dr. J. Norman Collie, F. R. S., who for the last six years has been assistant professor at University College, London. Dr. Attfield has never visited this country, although he has done so much for pharmacy in America. Now that he will have the leisure, if he could be persuaded to pay us a visit, we can assure him a hearty welcome and worthy reception.

PLANS have been filed in the Department of Buildings by the University of the City of New York for a building to be used as a library and zoological museum by the University. The building will be in the form of a semi-circle, one story in height, and the cost is put at $50,000.

W. C. MACDONALD, of Montreal, has given $500,000 to McGill University for the purpose of providing a building for the study of chemistry, mining and architecture. This brings his gifts to this university up to $2,000,000. Mr. MacDonald is a tobacco manufacturer in Montreal, who has made his money in that city, and believes in having good work done whilst he can see for himself that his gifts are accomplishing the objects of his desire. Are there no millionaires in New York who are willing to endow our College?

THE EDUCATION OF PHARMACISTS.

We publish in this issue a masterly paper on the subject of chemical education, by Professor Austen, which we commend to all students of chemistry, business men, parents and guardians generally, for careful perusal. At this time many young men may be wavering as to whether such a course of study as is provided by our College may be advantageous to them. The practical advice given in this paper will be of assistance in enabling them to determine their course of action. In our last issue we published an address by Dr. Duisberg on what we might term the higher education of chemists, showing what is required in Germany before a student is qualified to take the position of a technical chemist. On the occasion of the delivery of that address, Professor Coblentz called attention to the fact that in America we wanted to make haste all the time. We were in too great a hurry to turn out so-called chemists, under pressure from the parents, rushing the students through the colleges. In some instances our graduates go to Germany to complete their studies on account of the facilities offered there. It is with hope of arousing a sentiment for the provision of means by which this higher chemical education may be obtained in this country that we have taken up this subject—one which is attracting the attention of educationists and scientists in different parts of the world, other nations having realized the fact that the supremacy of Germany in technical industries, both from a scientific and commercial standpoint, has been accomplished by these supreme educational advantages.

But whilst we aim at so elevating the calling of the professional and technical chemist and would also elevate that of the pharmacist—in our sphere, this high standard is not an absolute requirement, we are desirous of raising the professional standing of the druggist and chemist, but must not overlook a fact which is too often most patent, that the commercial side of the question should not be neglected, and here the Alumni Association can get in its work. Instead of having the course of winter lectures, all of a social and entertaining character—why not have a series of lectures on "How to Conduct a Business,'' on book-keeping, buying and selling, preservation of stocks, etc. Such a course would be of immense value to the students, there is a professional side and there is a commercial side to our calling. The real difference is most simply expressed by observing that, ''in a trade transaction the public seek an article whereas in the professional aspect the individual is sought. In trade the public can examine the article offered, and estimate the value, but from the professional side it is necessary to confide in the individual having only his reputation and experience for guidance. In trade the individual is of small consequence, providing the article is genuine, but in a profession the individual is of first importance, his knowledge, his skill, his character count for everything. He professes to understand, and to be able to perform the duties pertaining to his specialty,'' and these two principles are so nearly combined in the calling of the druggist and chemist that it becomes difficult to show the line of demarcation, hence it is, we claim, that those who live up to this ideal have to make their calling more professional than otherwise, and so be qualified by a proper course of study to fulfil the obligations; such are the men who get on top, others who neglect this aspect of their calling become from sheer necessity mere traders, and have to go in the swim with those who cannot be taken on trust, because they have not given evidence of their capability to assume the professional side of their calling. So that while the commercial side should be subservient to the professional, the commercial side needs development in order that ignorance of proper business routine shall not degrade by sheer force of the necessity of making a livelihood, the professional man to the level of a mere trader.

M. MOUSSAN is reported to have discoursed a substance which is harder than the diamond in the form of a compound of carbon and boron. It is produced by heating boracic acid and carbon in an electric furnace at a temperature of 5,000°. In appearance the composition is black and looks not unlike Zoophite; and its hardness is so great as to enable it to cut diamonds with ease. Unlike the results of previous experiments in artificial diamond making, which were in minute particles, the new cutting material can be produced in pieces of any size required.—*Sci. Am.*

Alumni Association.

ADJOURNED meeting held in the College Library, July 1, 1896, at 8.30 P. M. Pres. Searles in the chair.

Present: A. Henning, '76, Alfred H. Mason, Alfred Stover '83, H. A. Herold '94, A. C. Searles '85, J. Tannenbaum '93, Geo. J. Dürr '95, T. B. Breen '91, A. F. Drollinger '96, Chas. G. Gerken '96, R. Gies '95, Thos. Le Clear '96, J. Hostman '96, Jas. J. Brooks '96 and C. M. Rawlins '96.

On motion the regular order of business was suspended, and the appointment of a Reporter in Chief considered.

Mr. Henning moved that the President appoint a member of the Association to review Class and Alumni Association notes, same to be revised in consultation with the editor. Motion carried, and appointment deferred pending selection of a suitable person.

Various bills contracted between April 29th, 1896 and June 25th, 1896, amounting to $134.32 were then submitted.

An Auditing Committee consisting of Messrs Gies, Gerken and Hostman was appointed, who reported favorably, whereupon motion the Treasurer was ordered to pay them.

The resolution to amend Article V, Section 4 of the By-laws, and the resolution affecting voting capacity of members in arrears, were laid on the table until next meeting as Secretary had failed to notify members of intention to change By-laws, according to the Constitution.

It was then moved that the Secretary notify all members of the pending resolutions affecting change of By-laws, to be acted upon at the next meeting. Motion seconded and carried.

Mr. Davies of the Outing Committee reported progress.

Motion carried to suspend By-laws for this meeting, applying to membership fee in order to elect new members.

The following names were then proposed for Membership:

Emil Rohala '93, Emanuel Lehman '93, J. E. Ricksecker '93, Wm. O. Luthnan '93, Jos. E. McCarthy '93, Jacob S. Stage '93, John P. Powers '93, C. H. Bjorkwall '95 and Bruno F. R. Dauscha '95.

Upon motion Secretary was ordered to cast one affirmative ballot electing the foregoing members, and the President declared them.

Mr. Julius Tannenbaum then proposed another Outing. After discussion the motion was carried, same to be held under the auspices of the same Committee, in August or September.

Alumni Day Committee submitted their report and on motion of Mr Stover it was adopted and ordered placed on record. Motion was also made and carried that the item of expense therein mentioned be audited and paid.

President then announced that nominations for 3d Vice-President were in order.

Mr. Gregorius was nominated by Mr. Herold and seconded.

Miss O'Connor nominated by Mr. Tannenbaum and seconded.

Vote resulted in a tie. President then cast deciding vote, electing Mr. Gregorius.

Upon motion meeting was adjourned.

H. A. Herold,
Sec'y pro tem.

Class Notes.

John H. Morey, Class of '89, with W. E, Cramer, Park avenue and 73d street, for the past five years, has opened a store at 104th street and the Boulevard.

Chas. Sickenberger, Class of '91, is manager for Fred. W. Turner, 91 Lawrence street, New York.

'93 NOTES.

Vacation season is now at its height. 'Most everyone has had or is looking forward to his brief respite from the exacting duties of the store. Let us be thankful and make the most we can of our limited holiday. I wish you all good luck and enjoyment on your vacation.

Once more a '93 man comes to the front with a rush, Charles Boldman having passed the Regents with honor in chemistry and botany. He naturally attributes his success to the tuition received while at our College, and is as proud of his Alma Mater as she most justly is of him. And we—well, well, all our dreams of the future fame of the Class of '93 are rapidly being realized. Boldman is now taking a vacation in the White Mountains.

Fred. Bailey was discovered by the omnipresent Tannenbaum taking a trip up the Hudson. He was so busy endeavoring to make two maidens fair, happy that no details as to his whereabouts or doings could be obtained.

William H. C. Schopfer is studying medicine at a Philadelphia medical college. He is now at his home in Newark preparing for a session of hard work.

William Luttmann was found, but is again either lost, strayed or stolen. We anxiously hope that he will turn up again, "right side up with care."

Our beloved friend and fellow classmate, Bert Schreiner, was seen with a charming blonde damsel. He now wears eye-glasses, so as to get a peep into the future before enjoying the pleasures of connubial bliss.

E. Lehmann is distributing the knowledge he acquired at College, gratis, to a choice assortment of Juniors and others who are not Juniors. His address is 2592 Atlantic avenue, Brooklyn.

Fred. Perry has subscribed to the Journal and says he's glad of it. He is taking a course in the literary department of Alma College, Alma, Mich., and hopes to graduate at the completion of the college year. In the Junior year he took first honors for "depth of thought, thoroughness of research, ease and excellence of delivery, and general oratorical effect, both in positions assumed and enunciation." The subject was "A Few Possibilities in Chemistry." He expects to become a professional chemist, and intends taking his A. M. either at the University of Michigan or at Columbia. Let us hope it will be Columbia, so that we can again have the dear fellow with us.

Send news about yourselves. During this depressing weather my brain refuses to throb, so I have to depend upon suggestions from the boys.

CHAS SCHANCK is one of our new subscribers. He is at Asbury Park. He has been accepted as a Cerot in Mecca (whatever that is).

GEORGE JOHNSON is managing a store at Summit, N. J.

FRIEND LAUFFER reports business booming in Bloomfield. That's right, "Popper," make hay while the sun shines, but look out that you don't get a sunstroke.

E. F. L.

'94 NOTES.

COL. WADE is reported to be in town. Report not yet investigated.

CAPT. ERB would like a companion to accompany him on a 'cycle trip to Washington during the latter part of August. He will return by rail, stopping off at the Quaker City. As the roads are always in good condition it should make a fine trip.

OSCAR I. VAN TASSELL, of Hegeman's, Broadway and 9th street, has just recovered from an attack of typhoid fever which for a time looked quite serious. His rapid recovery, therefore, was a pleasure to his many friends.

B. EDGAR DAWSON, of Fraser's, was unfortunate enough to lose his pocketbook while traveling through Boston on his vacation. Such a predicament naturally marred his pleasure trip considerably.

WITH the advent of summer many pharmacists are tempted to cast aside business cares and seek recreation during the hot months. A worthy exception, however, is found in Sergt. Davies, who immediately after returning from the Eighth Regiment's encampment in June, began to arrange plans for the fall Outing. '94 really feels proud of this Alumni worker.

DURING the Southern tour of the '94 contributor, he had occasion to visit a colleague who was practising dentistry, During their conversation they were interrupted by an old negro who wanted to have his teeth fixed. After an examination our friend announced that it would be necessary to use nitrous oxide gas, whereupon the darkey said: "That so? Say, boss, can't you use kerosene oil? I know what that is."

AT this writing most of the boys are either away on a vacation or working extra time while his fellow clerks are away, consequently items are at a premium.

DR. HENRY KREUDER is spending much time in the clinics just now, his spare time being devoted to cycling. Fortunately, however, he is not one of those "cyclometer fiends," who have a daily schedule.

CAPT. LUDWIG ERB, of the N. Y. C. P. Cyclers, anticipates many pleasant little tours for his team this season. In an interview with the writer a short time ago, he spoke favorably of a century run in the near future.

SECRETARY-TREASURER AUERBACH, of the Cyclers, is out of town. It is rumored that he won two good races under the "Blue and Gold" recently.

HIERONIMUS A. HEROLD, who discarded the U. S. P. to take up Blackstone, is, as Secretary *pro tem* of the Alumni, busily engaged on the revised Constitution and By-Laws of the Association.

WHO doesn't remember our Glee Club? Where are you, gentlemen? Kindly come forth from your hiding places and assert yourselves.

N. S. K.

'96 NOTES.

ALEX. DEUTSCHBERGER, the only man in our Class who dared to raise whiskers, has opened a store on the corner of 82d street and Lexington avenue,

GOLDLUST, the so-called "Poodle Man," has resigned his position with Alexander & Van der Smissen and has accepted one with Appelman on Amsterdam avenue.

FRANK JENNINGS is with his father at Far Rockaway. He and Hayward are both doing credit to the Class of '96 in selling soda and directing people as to how find the cars down there.

WHILE passing Bohmfalk's, at 54th street and 2d avenue, I discovered Novak's smiling face behind the counter. Eggers is also employed there.

FROM what I hear I understand Frank H. Finlay, the boss kicker of our Class, has left Smith and is with Wm. J. Blair, 399 9th avenue, New York City.

"COUNT" LOUIS VON HOSTOMSKY is still with Van Horn & Ellison, 41st street and Park avenue. He has been transferred from their laboratory to their extensive prescription department.

SCHNACKENBERG reports progress in his new position as proprietor at 426 Pearl street.

MOSSMANN is "running" Boetzke's Bensonhurst pharmacy, and says nothing beats a country store.

NORCROSS can be found at his old position with Keeler at Far Rockaway.

CHARLES WESTLEY SMITH, of bowling fame, most certainly does not believe in the "Raines Commandments." He is on the road pushing Roman Punch. May he make as many strikes as he used to when pushing the balls in 67th street.

GERKEN has left Erb and New York, and is now with Schlessinger, 645 Bedford avenue, Brooklyn.

DROLLINGER tells me he is managing the "Sands Drug Store;" corner of Avenue C and 10th street.

RAWLINS has disposed of his store and is "doing time" in one of the larger dispensaries.

BRANNER is with Klussmann, Bloomfield and 1st streets, Hoboken.

BARBER has resumed his position with Hartnett of Jersey City.

FULTON, he with the curly hair, is still a Jersey farmer. He is with Legget in Plainfield.

CANTWELL is enjoying life at Long Beach, L. I., with E. A. Aucelin,

WHILE taking the Jersey examination at Trenton, July 16th, I met Barber, Darmstadt and Fulton. There were also several '95 graduates present.

IT is the desire of the Committee of Arrangements for the next Outing to be held at the end of August or beginning of September, to have a baseball game between the Class of '96 and Alumni Association. All those who wish to participate will please communicate with the reporter.

J. H.

A CHEMICAL BLOTTING PAD.

A cheap and excellent substitute for blotting paper may be extemporized as follows:—Mix fourteen parts (by weight) of gypsum and two of potatoe flour with sufficient water to produce a plastic paste. Pour or press into suitable mould. As soon as the mass has become hard and dry, it affords an admirable blotter.—*Sci. Am.*

THE PHARMACOPŒIAL STANDARD.*

Professor J. U. Lloyd believes that many of the standards of pharmacopœial products are too exacting, and should be modified. He groups official compounds into three classes: first, those that rapidly deteriorate, and though they may be up to the standard when freshly made, soon fall below it; second, those the pharmacopœial standards of which are so high that their production is impracticable, or needlessly expensive; third, those that are largely used in the arts and commercial pursuits, and for which the necessities of manufacture or custom have established different standards than those prescribed by the Pharmacopœia.

Under the first class, Professor Lloyd places Labarraque's solution, Goulard's extract, sulphurous acid, stronger ammonia water, spirit of ammonia, and ammonia water, and, by recorded experiments, shows how each of these preparations unavoidably diminish in strength on keeping. Under the second class, he names Monsel's solution, and solution of ferric sulphate, while under the third class he designates chlorinated lime, sulphurated lime, caustic potash and caustic soda.

In connection with this subject, there has come to our notice the excessively high standard of the Pharmacopœia in connection with the official bromides of potassium, sodium and ammonium. The Pharmacopœia permits in potassium bromide a limit of only 3 per cent. of potassium chloride, in sodium bromide a limit of 2.71 per cent. total impurities (including sodium chloride), and in ammonium bromide a limit of but 1 per cent. of ammonium chloride.

It may not be generally known that it is impossible to obtain these alkaline bromides of *American* manufacture with the limits of chlorides officially demanded, for the reason that the bromine of American origin contains chlorine, from which the German is free, and the erection of plants in this country for the purification of bromine from chlorine, is not, we are informed, commercially practicable, because the salt-wells are small in output, and distant from each other. During the past ten years it has been found that the percentages of potassium chloride in American potassium bromide have been, in different lots, as follows: 5.52, 4.59, 4.67, 6 58, 4 8, 6.2, 5.4, 4.1, 5.6, 5.76 and 5.5. During the same period, analysis of sodium bromide have shown the following percentages of sodium chloride: 6.48, 6.23, 7, 7.28, 6.1 and 5.8. Analysis of ammonium bromide have shown these percentages of ammonium chloride: 2.62, 3.52, 3.45, 3.13, 2.61 and 3.4.

---

*Abstract of paper read at meeting of Philadelphia College of Pharmacy, from the Alumni Report.

These analyses represent many thousands of pounds of the best alkaline bromides that have been commercially obtainable, and show how impossible it has been for pharmacists to get bromides of the pharmacopœial standard, if the products be made from American bromine. If the Revision Committee wishes to discriminate against American chemical manufacturers in favor of the foreign then, possibly, bromides of the official standard may be had; but, we are informed, bromides of the official standards are not commercially made with American bromine.

Prof. Lloyd observes that conditions have arisen to develop "the curious fact that the very precision and thoroughness of the Pharmacopœia may furnish a scource of hardship to those whom it was intended to aid, on account of its being looked upon as the legal code by persons appointed to enforce laws regulating the purity of drugs." He believes in view of the unavoidable variation in strengths of certain products, that a scale of reasonable variations should be affixed by the Revision Committee to different pharmacopœial preparations, not only in justice to pharmacists, but also in justice to those whose duty it is to enforce the food and drug laws. In this opinion he will doubtless be supported by the mass of American pharmacists, who, while they are desirous of having the highest possible standards in the Pharmacopœia, are not in favor of having them unreasonably high, and without a certain flexibility to meet reasonable variations in strength. With some of the standards too high, the remedy would seem to be not as has been proposed, to repeal the laws that have accepted the Pharmacopœia as an authority, but to modify or qualify the objectionable standards, so as to make them comport fairly with existing conditions.

SOME CONSTITUENTS OF THE ROOT OF "POLYGONUM CUSPIDATUM."

BY A. G. PERKIN.

Polygonum cuspidatum is a native of China and Japan, and flourishes in parts of India and Russia. The freshly gathered roots consist of a thick, succulent bark of an orange-red color, and a central, woody portion of a light yellow tint.

The principal constituent of the root bark was found to be a glucoside, $C_{21}H_{20}O_{10}$, crystallizing in lustrous, yellow needles melting at 202—203°. On hydrolysis, this yielded 61.82 per cent. of a product which was recognized as *emodin*, the reaction $C_{21}H_{20}O_{10} + H_2O = C_{15}H_{10}O_5 + C_6H_{12}O_6$ requiring 62.5 per cent of emodin. This glucoside, for which the name *cuspidatin* is proposed, differs considerably in properties from frangulin, $C_{21}H_{20}O_9$, the glucoside of emodin which is contained in the bark of the *Rhamnus frangula*.

A second glucoside was also isolated,

but in too small quantity for analysis. On hydrolysis, it yielded a crystalline substance, melting at 199°, which by treatment with sulphuric acid at 160°, was converted into emodin. It was found to be identical with the emodin monomethyl ether previously isolated from the root bark of *Ventilago madraspatamœ* (Trans., 1894, 923). The other substances found were a small amount of free emodin and a wax which crystallized in colorless leaflets melting at 134—135°. This latter was found to be identical with the wax $C_{18}H_{28}O$, present in the root bark of the *Morinda umbellata* (Trans., 1894, 854.)

An examination is being carried out of the constituents of the roots of the *Polygonum bistorta* and *Rumex nepalensis*, which are closely allied to this plant.—*Proc. Chem. Soc.*

◆

PASTE FOR ATTACHING LABELS TO GLASS.

One ounce of flour rubbed to a smooth paste with four ounces of water, then boiled, keeping it well stirred, add five grains bichromate potassium slowly, stirring all the time, then stand to cool, makes a good paste for attaching paper to glass. The paste must be kept in the dark and used as soon as possible. Soak the paper in it, and attach to the glass, then place in direct sunlight for several hours. This sets up a chemical change in the bichromate and renders the paste insoluble.—*Sci. Am.*

PASTE FOR BOTTLE LABELS.

Dextrine impregnated with from 0 3 to 0 5 per cent. of thymol, produces a paste which has thus far proved all that can be desired for bottle labels, etc., and which will not ferment.

REMOVAL OF INK STAINS FROM SILK.

Soak the spot in spirits of turpentine and let it stand for sometime; then rub it gently between the fingers and the stain will come out and the color and texture of the silk remain uninjured. This can be done by stretching the silk and putting a drop of the turpentine on it, renewing it until the desired effect is produced. The stain and odor of the turpentine will disappear in a short time.—*Sci. Am.*

SPIRITUS MYRCIÆ.

BY KARL SCHNACKENBERG.

It is with reluctance that I make public my opinion about this preparation, because anything contained in the U. S. P. is, and ought to be, a "touch me not." But if the jovial commencement orators or banquet speakers are correct as to the broad minded, high-spirited pillar of the commonweal, the pharmacist—and I am last to doubt their words—then one may look critically upon our sacred guide and at least attempt improvement when needed.

Two objections may be raised against the official Bay Rum: 1. Faulty directions for preparing. 2. The absence of color. Both have been overcome in this manner: Dissolve the oils in 220 Cc. alcohol, to remaining alcohol (1000 Cc.) add 800 Cc. of water and the solution of oils, finally enough water to make two litres. Thus the milky fluid, caused by addition of water to solutions of ethereal oils, which is due to precipitation of terpines and may be likened to resin-emulsions, is avoided, since a clear liquid results, which may at times not even require filtering.

A colorless Bay Rum is not popular. A rather unique coloring agent was finally stumbled upon: NH_4OH, about 2-3 drops per pint or 5 8 drops per L, produces a desirable yellowish green tint. The addition of a few drops of NH_4OH to a pint should be a powerful argument as to the superiority and increased efficacy of your Bay Rum to your homeopathic friends; hence do not omit it in your "ad."

◆

THE elder Baron Rothschild had these rules rules posted upon the walls of his bank.

Shun liquors.
Dare to go forward.
Never be discouraged.
Never tell business lies.
Be polite to everybody.
Employ your time well.
Be prompt in everything.
Pay your debts promptly.
Bear all troubles patiently.
Do not reckon upon chance.
Make no useless acquaintances.
Be brave in the struggle of life.
Maintain your integrity as a sacred thing.
Never appear something more than you are.
Take time to consider, and then decide positively.
Carefully examine into every detail of your business.

INCOMPATIBLES FROM THE DRUGGISTS' STANDPOINT.

Physicians are very apt to be critical as to the work of the druggist who compounds their prescriptions. In a series of articles and discussions in the *Journal of Medicine and Science*, several druggists have presented their side of the question, and show that doctors sometimes do not prescribe in an ideal way. Mr. T. J. Stevens, of Portland, Me., after making some observations upon the subject of "Incompatibles, Chemical and Therapeutical," states that a rather common mistake is made in prescribing the salts of the alkaloids. The addition of an alkaline hydrate to a solution of these salts causes them to precipitate. He had, at the time of his writing, a prescription containing a mixture of morphine sulphate, bromide of soda, and cinnamon water, in which the bromide of soda decomposed the morphine salt, precipitating the pure alkaloid. Another noteworthy incompatibility is that of tannin with the salts of the alkaloids. A prescription was received containing tannic acid and sulphate of morphine. This produces an insoluble tannate of morphine. Another curious thing, that still continues to be prescribed, is "colorless tincture of iodine," made by the addition of hydrate of potassium to tincture of iodine. This is really a solution of the alkaline iodides. Mr. Stevens remarked that the medical profession is unusually generous in supplying material for his discourse, and soon after getting his morphine and bromide prescription he received one containing calomel and syrup of iodide of iron. The calomel is decomposed by the iodides or bromides and metallic mercury is liberated, which is described as a "powerful poison"—a statement to which we can hardly agree; but, all the same, it is not what the patient is expected to receive when calomel is prescribed. A frequent incomptability is the addition of tincture of iron to some bitter tonic containing tannin, by reason of which the patient receives a more or less agreeable preparation of ink. If water is added to tincture of cannabis indica in a prescription, as is sometimes done, the resin of the cannabis rises to the top and the patient gets a very strong dose, unless the bottle is well shaken.

The Portland physicians seem to be, on the whole, however, rather careful prescribers. The occasional mixing up of mucilage of acacia with spirits of nitre or other strongly alcoholic fluids, and the addition of iodine to oil of juniper, are examples of what might be considered "breaks" in the matter of proper prescribing.

In the discussion by physicians; which followed that of the druggists, the possibility of making mistakes or prescribing incompatibles does not seem to be very much considered. The burning question in Portland seems to be, rather, whether a physician should prescribe at all or should dispense his own drugs. Radical opinions were expressed upon both sides but the general view was the very sensible one, that both practices should be adhered to.—*Medical Record*, *June*, *1896*.

SALT puts out a fire in the chimney.

Salt in the oven under baking tins will prevent their scorching on the bottom.

Salt and vinegar will remove stains from discolored teacups.

Salt and soda are excellent for bee stings and spider bites.

Salt thrown on soot which has fallen on the carpet will prevent stain,

Salt put on ink when freshly spilled on a carpet will help in removing the spot.

Salt in whitewash makes it stick.

Salt thrown on a coal fire which is low will revive it.

Salt used in sweeping carpets keeps out moths.—*Cincinnati Lancet Clinic.*

Miscellaneous Notes.

SPANISH PRESCRIPTIONS.

BRONCHITIS.—Dr. R. Rivas.

Beechwood creosote, 8 decigrammes;
Iodoform, 4 decigrammes;
Helanin, 2 dicigrammes.

Mix and make twenty pills. Five to be taken during the day.

FLATULENT DYSPEPSIA.—Dr. Fernando Munoz.

Brucine, 10 centigrammes;
Quassine crystallized, 10 centigrammes;
Rhubarb, 3 grammes;
Essence of aniseed, 10 drops.

To be made into sixty pills. One to be taken after each meal. Or

Socotrine aloes, 20 centigrammes:
Extract of nux vomica, 20 centigrammes;
Powdered belladonna, 20 centigrammes.

To be made into twenty pills. One pill after each meal.

EPISTAXIS.

The following solution is recommended to be sniffed up the nose:—

Trichloracetic acid, 1 gramme;
Water, 30 grammes.

Mix.

When the bleeding is arrested the following mixture is to be freely applied on cotton wool:

Phenol, 15 grammes;
Benzoic acid, 15 grammes;
Tannic acid, 15 grammes:
Collodion, 100 grammes.

And in every case it is recommended to plug the posterior nares with tampons of lint wetted with the above.

VOMITING.

Menthol, 4 grammes;
Oilve oil, 10 grammes.

Mix.

Six or ten drops to be taken on a lump of loaf sugar.—*Gazeta Médica de Cadiz.*

SYRUP OF CHICKORY.

Dry chickory leaves	115	grms.
Water	500	"
White sugar	690	"

Infuse the dry leaves of the chickory in the water; strain the fluid through serge with strong pressure; add the sugar and make a syrup by beating and clarifying. Syrup of chickory and rhubarb made in a similar way is a very pleasan aperient for children.

SYRUP OF ABSINTHE.

Absinthe	30	grms.
Water	345	"
Loaf sugar	620	"

Make an infusion; strain the liquor through serge; allow it to clear by standing; add the sugar and produce the syrup by simple solution.

SYRUP OF VERJUICE.

Juice of unripe grapes	345	grms.
Pure sugar	620	"

Dissolve the sugar in the juice by the heat of a salt water bath.

SYRUP OF MARSHMALLOW.

Marshmallow root, scraped and cut	25	grms.
Water	145	"
Simple syrup	690	"

Cut the marshmallow root in small pieces, infuse them in water for 12 hours; strain the liquid without pressure; add the syrup; concentrate by boiling until the proper consistency is acquired, and then strain through serge.

SYRUP OF ORANGE FLOWERS.

Orange flower water	345	grms.
Loaf sugar	620	"

Make a syrup by simple solution of the sugar without heat.

SYRUP OF TAR.

Tar water of the silver pine	345	grms.
Loaf sugar	620	"

Make a syrup by simple solution.

SYRUP OF CITRON.

Prepared with the distilled water of citron peel in the same way as syrup of orange flowers.

SYRUP OF ORANGE PEEL.

Prepared with water distilled from orange peel in the same way as syrup of orange flowers.—*Translated from the Spanish Pharmacopœia.*

CAMPHOID.

Camphor, 20 parts; absolute alcohol, 20 parts; Pyroxyllin, 1 part, each by weight—this preparation dries quickly and forms an elastic film which does not wash off—it is useful for painting over wounds, etc., and as it is a solvent for carbolic acid, chrysarobin, hydronaphthol, ichthyol, iodine, iodoform and salicylic acid, it is of value in dermatological treatment.—*Martindale.*

1,219 metric tons (35,122 flasks) of quicksilver was produced from the California mines in 1895.

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. No. 9.

September, 1896.

Contents:

THE PHARMACY OF PHOSPHORUS. - 213
By W. MARTINDALE, F. C. S.
ESTIMATION OF PHENOL IN SOAPS AND DISINFECTANTS, - - 218
By Prof. VIRGIL COBLENTZ.
Estimation of Total Alkaloids, in Cinchona Bark, Cocoa Leaves and Nux Vomica Seeds, - - - - 219
By C. C. KELLER.
FORMALDEHYDE IN PHARMACY, - 220
By F. C. J. BIRD, Ph. C., F. I. C.
The Disinfection of Books by the Vapor of Formalin, - - - - - 221
By E. G. HORTON.
BOTANY AND MATERIA MEDICA, 222
Notes by Prof. H. H. RUSBY.
THE MAKING OF A HERBARIUM, - 223
By CLEMENT B. LOWE, Ph. G., M. D.
THE EFFECTS OF CLIMATE AND SOIL ON OILS OF PEPPERMINT, 225
By JOHN C. UMNEY, Ph. C., F. I. C.
LIQ. AURIET ARSENII BROMATUS, 226
By R. WRIGHT, F. C. S., Ph. C.
MONONITROGUAIACOL, - - - 228
By RAPHAEL MELDOLA, F. R. S.
ESSENCE OF RENNET, - - - 229
By J. A. FORRET.
The Detection of Acetanilid in some closely Related Synthetical Compounds 229
By FRANK X. MOERK.
Standardizing of Normal Acid by Borax 230
By FRANCIS BERGAMI.
THE CHEMISTRY OF SACCHARIN, 230
By ECKENROTH & KOERPPEN.
EDITORIAL, - - - - - - 231
A. PH. A. MEETING, - - - 232
RESULTS OF FOLLOWING THE RULE OF PRIORITY IN PLANT NAMES, - 232
By Prof. H. H. RUSBY.
CLASS NOTES—Class '93-'94 - - 233
" " Class '95, '96 - - 234
ALUMINUM—A WARNING, - - 235
Reagents and Reactions known by the Names of their Authors, - - - 236
MISCELLANEOUS NOTES, - - 239
TABLET MAKING AT THE DISPENSING COUNTER, - - - - 240
By S. HARDWICK.

PUBLISHED BY
THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . .

digestive inertia

Functional Atony, or whatever you may call it, is often at the bottom of a case of Infantile Diarrhoea during the summer months. If the digestive juices do not properly convert the food it ferments in the intestinal tube.

Lactopeptine

by artificially supplying the necessary digestive ferments, prepares the ingested nourishment for absorption, thus aiding in the restoration of normal function.

This is NOT THEORY, but
DEMONSTRATED FACT.

Be sure, however, that it's *Lactopeptine* and not some inert substitute. Send r samples and literature.

The New York Pharmacal Assoc. Yonkers, N.Y.

OLDEST STAND ON BROADWAY

TRINITY CHURCH 1697
MILHAU'S PHARMACY
BALTIMORE 1813.
NEW YORK 1830.
AT 183 BROADWAY.
CORTLANDT ST
DEY ST.
TRADE MARK.
ST. PAUL'S CHAPEL 1764

THE "ANIMAL EXTRACT CO.'S"

CARDINE, heart extract, for Heart troubles

CEREBRINE, brain extract for Epilepsy, Brain, Nerves, Hysteria, etc.

MEDULLINE, extract of Spinal Cord, for Locomotor-Ataxia, etc.

MUSCULINE, for Muscular Rheumatism,

OVARINE, for Diseases of Women, Sterility, Nervous Prostration, etc.

TESTINE, for Nervous Debility, Impairment, Impotency Exhaustion, etc.

THYROIDINE, for Obesity, Goitre, Skin Diseases, Myxoedema, etc.

☞ *Positively guaranteed as the only brand always strictly according to Dr. Hammond's published formulas. $100 forfeit if not.*

Dr. DECLAT'S PHENIC PREPARATIONS, for Cancer, Consumption and all Fevers.

Medals awarded, Paris, Lyons, &c. for Phenic Acid and Compounds.

J. MILHAU'S SON, Ph. G., DRUGGIST AND IMPORTER
183 Broadway, - - - - - - - NEW YORK.
CABLE, "MILHAU." TELEPHONE, 3780 CORTLANDT.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

LIBR
NEW
BOT
GA

Vol. III. New York, September, 1896. No. 9.

THE PHARMACY OF PHOSPHORUS.

BY W. MARTINDALE, F. C. S.

The salts of the oxygen compounds are mostly soluble, there is no difficulty in dispensing them in aqueous solution, and on the whole they are comparatively palatable, but the administration of phosphorus in a free state, or in solution in a free state rather than chemically combined, presents pharmaceutical difficulties, as it is an acrid poison and causes gastric derangement with unpleasant eructations, which render its agreeable administration in large doses hardly possible.

Phosphorus does not melt below 111° F., and unless it be administered in the state of solution, or in very fine subdivision by emulsion or otherwise, it is doubtful whether it is completely assimilated or produces all its therapeutic effect. It would be preferable to administer it in solution if the solvent were otherwise suitable. At the ordinary temperature it requires about 320 volumes of absolute alcohol, 200 volumes of absolute ether, 50 volumes of chloroform, 100 of Dutch liquid, and about 100 parts of most fixed oils and fats to dissolve it, but the exact solubilities are difficult to ascertain. Being insoluble in water, it is thrown out of solution when added to this as a vehicle for administration, if the solvent be miscible with water. It is soluble also in, or rather combines with several essential oils, such as those of turpentine, peppermint, neroli, bergamot, lavender, rosemary, etc. It is also soluble in melted resins, but not unchanged in some. These essential oils, therefore, and many resins would appear to be incompatible with phosphorus, either as excipients or correctives.

We have preparations of phosphorus in the free condition in the British pharmacopœia, two formulæ for phosphorated oil and also two for phosphorus pill. The Unofficial Formulary of the Britsh Pharmaceutical Conference has a compound tincture and an elixir, and the United States Pharmacopœia has an elixir, a pill and a spirit or tincture. I mention also in the "Extra Pharmacopœia" the following as being used medicinally: Æther phosphoratus (*French Codex*, 1839) perles of phosphorated oil, phosphorated cod liver oil, a phosphorus pill (special), sevum phosphoratum, and compound pills of this containing iron, quinine and strychnine or nux vomica.

Some of the before-mentioned are liquid preparations, and on this account, notwithstanding their being active therapeutically, are repugnant to the taste and stomach, and generally considered unpalatable. Others are in a pilular form, or perles, and are apt to be quickly oxidized from the great affinity of phosphorus for oxygen, unless well protected from the air, or, if so protected, the composition or covering may be so perfect that it may withstand the digestive action of the system when it is administered, as was the case with the pill in the "Additions to the British Pharmacopœia" of 1874.

PHOSPHORATED OIL.

Of the liquid preparations, this, which is official—containing about 1 per cent. of phosphorus dissolved in prepared almond oil, and the dose of which is stated to be 5 to 10 minims (greatly too much)—is exceedingly nauseous, administer it as you will. Dr. Redwood suggested its being emulsified with yolk of egg, liquor potassæ, syrup of tolu and chloroform water, but it is never employed medicinally. It may be used as a toy, exhibiting its peculiar phosphorescence, or for producing evanescent "writing on the wall," but the medical profession and the public refuse it. It appears to be a nearly saturated solution at the ordinary temperature; although as much as 2 per cent. of phosphorus can be dissolved by the aid of heat and the exclusion of air nearly one-half crystallizes out on cooling. It may, however, be conveniently administered in the form of perles or capsules, which are largely used; containing a dose equal to 1-100, 1-65 or 1-32 grain of phosphorus, respectively; but unfortunately they are irregular both in size and in the amount of contents, still they are well protected from the air.

PHOSPHORATED COD LIVER OIL.

Phosphorated cod liver oil contains about 1-100 grain in a dram. It may be made by adding one volume of the official phosphorated oil to fifty-nine volumes of cod liver oil. It is unpalatable, and quickly oxidizes and coats the sides of the bottle. Still it may be kept reasonably stable in capsules, containing one dram in each.

ÆTHER PHOSPHORATUS.

This is best prepared by comminuting the phosphorus, 1 part in warm absolute alcohol, 4; decanting and adding absolute ether 20; then macerating one month and decanting. It is better to decant it when dispensed, keeping the excess of phosphorus in the bottle; about 1 part in 200 volumes is dissolved. It is an active but unstable preparation, and has been dropped from the last edition of the *French Codex*.

SPIRIT OF PHOSPHORUS, U. S. P.

Spirit of phosphorus, U. S. P., contains 0.12 per cent. dissolved in absolute alcohol; it, too, is unstable. A similar preparation has been recommended here but as it quickly oxidizes it is an unsatisfactory preparation.

COMPOUND TINCTURE PHOSPHORUS, B.P.C

Compound tincture of phosphorus, B. P. C., is prepared by dissolving phosphorus, 1 part, in chloroform, 30 volumes, and adding it to absolute alcohol so as to contain 1 part of phosphorus in 600 volumes. Although it keeps without depositing, it becomes acid, and requires to be freshly prepared. When diluted with four volumes of glycerin, it forms the elixir of phosphorus, B. P. C., which contains 1-50 grain in a fluid dram. If freshly prepared this is palatable and well borne by the stomach.

Various other formulæ for liquid preparations of phosphorus have been suggested. The late Mr. John Williams recommended a solution of phosphorus in glycerin, to which an equal volume of absolute alcohol was added, containing about 1-30 grain in a fluid dram. It was a modification of a formula recommended by Mr. A. Thompson. It is more difficult to prepare and even more unstable than the B. P. C. elixir.

LIQUOR PHOSPHORI ALBUMATUS.

Phosphorus appears to form compounds with albumin, which preserves it from oxidation as well as from phosphorescence when in solution, and Mr. Urwick has suggested a formula in which albumin, cane and milk sugars and glycerin are combined with phosphorus to make a comparitively palatable preparation.

CAUTION.

The avidity that phosphorus has for oxygen renders it necessary that liquid preparations should be as freshly prepared as possible. They should also be kept from the light, in a cool place, in perfectly closed bottles. The same remarks in a less degree apply to phosphorus in a pilular form.

PIL. PHOSPHORI.

The official pill is composed of phosphorus incorporated with balsam of tolu and yellow wax under hot water. This is directed to be kept under water, and two parts are to be incorporated with one of curd soap when dispensed. It contains about 1 in 90. The addition of soap has been made as the previously official pill was, as I showed completely undigested. Still, it has never found favor; the mass becomes hydrated by being kept under water, so that the pills of special manufacturers, some of which are beyond reproach, while others are at times insoluble, meet with greater demand. Messrs. J. Bell & Co. had previously published a formula for phosphorus pills made by dissolving 1 per cent. of phosphorus in melted suet, and coating the pills with gelatin; these were very tedious to prepare. As an improvement, I devised in 1866, for the late Dr. Tilbury Fox, a mass using prepared cacao-butter in place of suet. This contains 1 per cent. of the drug, the pills of which I cover with sandararch solution. These masses contain the phosphorus in perfect solution; still for general dispensing they are not altogether satisfactory, as they require an even temperature both to make and keep them, and to be well excluded from the air and light.

As phosphorus dissolves in less than its own weight of bisulphide of carbon, advantage has been taken of such a solution to mix it with an inert powder or suitable mass, so as to obtain the drug in a finely comminuted condition, perfectly distributed through the mass, on the evaporation of the bisulphide. While traces of it are present in the mass it acts as a preservative and checks phosphorescence or oxidation. Some may object to the use of bisulphide of carbon on account of its disagreeable odor, yet if purified it is not so disagreeable, but has an agreeable chloroform-like taste, and I think it is not so deleterious as has been supposed.

Mr. R. H. Parker suggests the employment of such a solution by diffusing it through licorice powder, as in the following formula :

Phosphorus, the prescribed quantity for 24 pills.

Bisulphide carbon	m. 30
Licorice root, powder	gr. 24
Glycerin	m. 4
Tragacanth, powder	gr. 2
Syrup	a sufficient quantity.

This formula has the disadvantage of using a large excess of the bisulphide, and the tendency to deflagration of the phosphorus as the latter evaporates. It is true the pills apparently keep well, as after nearly seven years I find they still contain phosphorus in its free condition. Probably some of the bisulphide gets locked up in the interior of the pills, and thus fixes the phosphorus, as they have the aromatic taste of the bisulphide still, and if cut in two are phosphorescent in the dark.

Messrs. Allen & Hanbury also published a formula, in which they employed the phosphorus solution in bisulphide. This mass, I am told, works well on a large scale, but it is not advisable, as I have before mentioned, that phosphorus should be combined with resins, which may interfere with its therapeutic activity. These pills are better adapted for pearl coating than for covering with varnish extemporaneously. Pearl coating covers a multitude of imperfections. The formula is as follows :

PIL. PHOSPHORI CUM SAPONE.

Phosphorus	gr. 2
Bisulphide of carbon	q. s. or m. 10
Hard soap powder	gr. 35
Guaiacum resin powder	gr. 35
Glycerin	drops 12
Licorice root, powder,	q. s. or gr. 12

to make a mass of 100 grains. To be divided into pills of the strength required and varnished or "coated" in the ordinary way.

Many pharmacists have written on the subject of phosphorus pills, including Messrs. Proctor, A. C. Abraham, Gerrard, Haffenden, Appleby, and Millhouse, most of whom recommend the use of bisulphide of carbon as a first solvent. Many of their formulæ I have tried, but to meet the requirements of an official formula, after numerous tentative experiments; I suggest the following:

PIL. PHOSPHORI.

Phosphorus	gr. 10
Oil theobroma, cut small	gr. 490
Bisulphide carbon	fl. gr. 200

Dissolve the phosphorus in the bisulphide of carbon contained in an amber-colored stoppered phial, add the oil of theobroma, and dissolve by agitation aided by the heat of the hand; then, if necessary, increase the volume of 750 fluid grains by the addition of more bisulphide of carbon. This solution will contain 1 part by weight of phosphorus in 75 fluid parts. If cooled below 59° F. it partially solidifies, but readily liquefies at a slightly higher temperature.

When dispensed after liquefication by the warmth of the hand, take of

Above solution	fl. gr. 54
Gum acacia, powder	gr. 18
Syrup by weight	gr. 18

Mix the solution quickly with the acacia, add the syrup, triturate into a uniform mass, and when most of the bisulphide has evaporated, roll it into twenty-four pills.

The mass of which these pills are composed will contain about 1 per cent. and each pill about 1-33 grain of phosphorus. Pills of other strengths may be prepared by dividing the mass into a proportionate number of pills.

The pills, after a little exposure to allow still more of the bisulphide of carbon to escape, may be coated with an alcoholic solution of sandarach, or other covering, they should be freshly prepared, and kept in a dark place in well closed amber colored bottles.

The quantity of syrup I have suggested is 18 grains; this may be added from a dropping tube after ascertaining the weight of a drop. In practice I find a large drop weighs 2 grains.

If varnished, the pills should be thoroughly dried before being bottled, else the traces of bisulphide left remaining in them may soften the coating, and cau them to adhere. They keep well if the covering be perfect. They take a pearl coating without much difficulty. They should, of course, be kept cool, and not carried in the waistcoat pocket or the grease may penetrate the coating.

These pills have the advantage over the ordinary cacao butter pills that they are much more easily made, and are more gradually assimilated; and as they are not so quickly dissolved they are less likely to upset the stomach. More than half of the phosphorus will be in solution in the cacao butter, the remainder with the cacao butter solution forms a solid emulsion with the acacia and syrup.

It may be objected that the quantity of bisulphide of carbon recommended is excessive. I tried experiments to lessen this by using an equal quantity of the bisulphide to that of the phosphorus and adding the cacao butter melted at 100° F. to this solution contained in a bottle, and shaking well. At first a perfect solution was obtained, but gradually about one-third, apparently, of the phosphorus separated out in a solid granular condition. I tried even three times this quantity of bisulphide, but still much of the phosphorus separated. As I before said, the solubility of phosphorus, although difficult to ascertain, is only slightly over 1 per cent. in such a fat as cacao butter. In the pill mass, it is true, it is present to the extent of 2 per cent. of the fat in it, or about 1 per cent. of the whole, but what has separated will be in a very finely comminuted condition. If a small quantity of the bisulphide would have answered, the mass could have been weighed when dispensed; this would have been more conveneint. Less, I dare say, may answer the purpose, but my desire is to make a mixed liquid solution containing 1 part of phosphorus in 75 volumes, which on evaporation of he bisulphide will yield 2 per cent. in the cacao butter, and 1 per cent. in the finished mass. Then, again, there is the uncertainty of the strength of the cacao butter and bisulphide solution after having been frequently warmed; still this can vary but little, as the warmth of the hand, as I have said, is sufficient to liquefy the mixture, and the fat will have a tendency to prevent quick evaporation. Working on a large scale, the rounding of the pills might be difficult, as they want body, and the pearl coating of them might not be so easily done as of pills containing resin; they might in fact if slightly heated during this process, stick together, owing to the melting of the cacao butter. The use of syrupy glucose to replace the syrup and part of the acacia would give more "body" to the pills and enable the mass to be better worked in quantity; glucose is much in favor with the large pill makers, but it is not official, and not easily defined, still it might be used as an excipient.

This mass is best worked at a temperature a little over 60° F.; there might be an objection to their being not easily prepared in warm climates. I find, practically, if coated with sandarach, they soften at 90° F. in water, but are probably much more permanent in the air.

The difficulties in exhibiting phosphorus in pilular form are numerous, and the above is the best I can suggest for the practical retail pharmacist. In this formula he has a solution in which the phosphorous is kept from oxidation, is fairly stable and can be dispensed into pills in a short time. Furthermore, the excipients acacia and syrup may be lessened to give place to other medicaments that the prescriber wishes to combine with phosphorus.

SEVUM PHOSPHORATUM (10%)

This I have recommended elsewhere for preparing a mass to blend with other medicaments with which the phosphorus may be prescribed. It is prepared by dissolving phosphorus, 1 part, in bisulphide of carbon 5 parts, adding suet 9 parts, mixing thoroughly and allowing the bisulphide to evaporate. It contains the phosphorus in a finely comminuted condition, and if mixed with an equal quantity of compound tragacanth powder together with the other drug—quinine, reduced iron or strychnine—adding a few drops of chloroform, the vapor of which prevents phosphorescence or oxidation—it can readily be massed by the addition of mucilage of acacia or syrup. Such pills, if covered with sandarach solution or pearl coated will keep a reasonable time, but the set, like the liquid preparations of phosphorus, and all pills containing phosphorus, are better freshly prepared. This phosphorated suet is unnecessarily strong, and for making compound pills might be replaced by a 4 per cent. oil of theobroma solution produced by bisulphide, similar to the 2 per cent. solution previously recommended for an official pill of phosphorus alone.—*Phar. Jour.*

ESTIMATION OF PHENOL IN SOAPS AND DISINFECTANTS.

BY PROFESSOR VIRGIL COBLENTZ.

Phenol is usually determined readily by the method of Koppeschaar which, as is well-known, depends upon the formation of tribromphenol resulting from the addition of a measured quantity of a standard solution of potassium bromate to acidified (HCl) phenol solution. The excess of the bromine solution being estimated by adding potassium iodide and titrating the amount of liberated iodine by means of a standard solution of sodium hyposulphite. (See U. S. P.)

In estimating crude carbolic acid, Koppeschaar directed that it be digested with water and after the tarry matter had settled the clear liquid should be examined Tóth directs that 20 C. c. of the crude acid should be allowed to stand for one-half hour with 20 C. c. of a concentrated potassium hydrate solution (1.30 sp. gr.) it is then diluted with water to ¼ liter, filtered, the filter washed till free from alkaline reaction, then acidified with hydrochloric acid and the volume made up to 3 liters. Of this an aliquot portion is estimated for phenol content.

Fresenius recommends this titrimetric method, but directs that the phenol be removed from the substance to be examined by acidifying with hydrochloric acid and distilling in a current of steam, the distillate being titrated directly. In estimating phenol in soaps, the author found that traces of the fatty acids were carried over into the distillate which raised the percentage of phenol found slightly. For commercial purposes this may be disregarded, otherwise a control experiment must be carried out with a soap free from phenol and the amount of bromine consumed estimated and deducted from that used in the regular estimation.

Fresenius employed the following solutions:

1.—Solution containing 9.763 Gm. cryst. sodium hyposulphite in the liter.

2.—Bromine solution, containing 2.04 Gm. of sodium bromate and 6.959 Gm. of sodium bromide in the liter.

3.—Filtered solution of starch.

The sodium hyposulphite solution is standardized by means of pure iodine and from this the bromine solution is standardized.

The solution containing the phenol to be titrated should not contain more than 0.1 Gm. to each 25 C. c.

The distillation should be carried on in a flask of 600 C. c. capacity and as receiver a flask of 500 C. c.

A sample of soap containing 0.1 Gm. of phenol, dissolved and acidified with sulphuric acid required distillation in a current of steam for one-half hour until all of the phenol was driven over into the receiver. To 0 1 Gm. of phenol from 85 to 150 C. c. of bromine solution were added and the mixture allowed to stand for one-half hour, to this was added a freshly prepared solution of 1.25 Gm. of potassium iodide in 30 C. c. of water, the flask securely stoppered and allowed to stand 12 hours, when it was titrated with the sodium hyposulphite in order to estimate the amount of liberated iodine.

The same rationale is applied in the examination of disinfecting powders (containing phenol) in which about 0.5 Gm. of the powder is placed in a retort with some water and 50 C. c. of concentrated hydrochloric acid. The mixture is heated to boiling and a current of steam passed through the retort until all phenol has passed over. The rest of the operation is already given.

ESTIMATION OF TOTAL ALKALOIDS.

BY C. C. KELLER.

IN CINCHONA BARK.

The author recommends the following method, which can be completed in a few hours, and which furnishes the alkaloids in as pure a condition as they can be obtained by any other process: 12 grms. of finely powdered dry Cinchona bark, contained in a dry flask of 200 c. c. capacity, are digested with 90 grms. of ether and 30 grms. of chloroform, and frequently agitated during five minutes; 10 c. c. of 10 per cent. ammonia are then added, and the mixture is well shaken. The shaking is continued at intervals for half an hour, when 10 c. c. of water (12–15 c. c. in the case of calisaya barks) are added, and the skaking continued until the liquid has become clear. 100 grms. of the chloroform-ether extract, after standing for 1 or 2 hours to allow the separation of water and powdered bark, are carefully poured into a separating funnel and extracted with 30, 20 and then 10 c. c. of 1 per cent. hydrochloric acid. The acid solution is then collected in a separating funnel, made strongly alkaline with ammonia and again extracted three times with a mixture containing in all 10 grms. of chloroform and 90 grms. of ether. After filtering the solutions of the alkaloids into a tared flask, through a small filter wetted with ether, the chloroform and ether are distilled off, and the residue dried at 80° to 90° and weighed. The weight of the residue corresponds to 10 grms. of Cinchona bark.—*Schweiz, Wochenschr. Chem. Pharm. 1895, 33, 449.*

IN COCAO LEAVES.

Twelve grms. of the powdered cacao leaves are treated in a 250 c. c. flask with 120 grms. of ether. After 15 minutes 10 c. c. of 10 per cent. ammonia are added, and the mixture well shaken. Precipitation is effected half an hour later by the addition of 20 c. c. of water and continued, violent agitation. 100 grms. of the dark green etherial solution are then poured off, and after standing some time to clarify, extracted with 50 c. c. and afterwards with 25 c. c. of 0.5 per cent. hydrochloric acid. The acid solution filtered if necessary is made alkaline with ammonia and extracted twice with 40 c. c. of ether. The residue, on distilling off in a tared flask represents the amount of alkaloid in 10 grms. of cocao leaves. The alkaloid is thus obtained as a colorless varnish, which crystallizes after standing some time.

IN NUX VOMICA SEEDS.

Twelve grms. of powdered nux vomica seeds are mixed with 80 grms. of ether and 40 grms. of chloroform in a dry flask of 200 c. c. capacity. After half an hour, 10 c. c. of 10 per cent. ammonia are added and vigorously shaken at intervals during an hour. 15 to 20 c. c. of water are then added in 2 to 3 portions to precipitate the drug. When the solution becomes clear after continued shaking, 100 c. c. are poured off and extracted in a separating funnel, first 50 and then with 25 c. c. of 0.5 per cent. hydrochloric acid. The acid solution is then extracted three times with a mixture of 30 grms. of chloroform and 10 grms. of ether. The united extracts are evaporated in a tared flask, and the residue, which retains chloroform, is repeatedly treated with 5 c. c. of ether, which is then boiled off, until this residue is obtained in the form of a white crystalline powder. The weight of the residue then represents the amount of alkaloids in 10 grms. of the seeds.—*Schweiz, Wochenschr. Chem. Pharm.—Jour. Soc. Chem. Ind.*

FORMALDEHYDE IN PHARMACY.*

By F. C. J. BIRD, Ph. C., F. I. C.

Formaldehyde is an exceedingly powerful antiseptic, and at first sight appears to be one which should prove exceptionally valuable in certain pharmaceutical operations on account of its intense germicidal action, the absence of odor or taste in dilute solution, its non-poisonous nature, and its volatility. It has been stated that milk may be preserved by formaldehyde, and the antiseptic subsequently driven off on boiling or cooking the milk; this statement suggests a practicable process for the preparation of liquid extracts such as ergot by repercolation with cold water. The difficulty of preventing the ergot liquors from turning sour when working in any but the coldest weather presents an almost insuperable obstacle to the adoption of the method under present conditions, but it was thought that by the use of formaldehyde the ergot percolates might be kept sweet, and the antiseptic finally removed by the application of a moderate temperature at the end of the operation. To my disappointment, however, I found that formaldehyde is retained by aqueous liquids with the greatest pertinacity, and it is almost impossible to effect the removal of the last traces. The following examples will illustrate this:—

I. Forty fluid ounces water containing 80 minims formaldehyde solution (=1 in 600) was heated to 200° F. on a water bath at intervals during four days, until the volume was reduced to 10 fluid ounces. Tested from time to time, it always gave abundant evidence of the presence of formaldehyde, and on gently warming the residue the characteristic odor became distinctly perceptible.

II. 100 C. c. distilled water, containing 1 minim of solution of formaldehyde (about 1 in 3800) was rapidly boiled down to 40 C. c. The residue still reacted strongly for formaldehyde.

III. 100 C. c. water containing $\frac{1}{10}$ minim formaldehyde solution (=1 of formaldehyde in 38,000) was distilled, and the distillate collected in fractions of 5 C. c., each fraction being tested with Nessler's reagent.

Fractions 1 to 7 gave a brownish yellow opalescence, changing to copious orange precipitate, which gradually became yellow, and finally blackened.

Fractions 8 to 16. A yellow precipitate which darkened on standing.

Distillation was now stopped, and the 20 C. c. remaining in the retort tested. A distinct yellow precipitate fell, indicating that the liquid still contained formaldehyde. These facts will evidently have to be taken into account in any quantitative process dependent on the distillation of mixtures containing formaldehyde.

If used as a preservative for infusions, etc., the small proportion necessary does not affect either the taste or flavor of the liquid, an important advantage when contrasted with chloroform. The following table gives the result of a trial of its antiseptic powers on four of the Pharmacopœia infusions.

The Roman numerals represent five series of samples (each measuring 10 fluid ounces) which were treated as follows:

I. No addition.

II. Vapor from one minim formaldehyde solution.

III. Vapor from five minims formaldehyde solution.

IV. One minim formaldehyde solution added to the infusion.

V. Five minims formaldehyde solution added to the infusion.

The infusions were kept in corked bottles, exposed to most trying conditions of temperature, the thermometer registering from 70° to 80° F. during the whole week.

Inf. Sennæ, B. P.

	I.	II.	III.	IV.	V.
2d day	Slightly d'comp'd	Unch'g'd	Unch'g'd	Unch'g'd	Unch'g'd
3d "	Sour and putrid	Slightly d'comp'd	"	"	"
4th "	"	Sour	"	Sour	"
5th "	"	"	"	"	Slightly mouldy, no putrid odor
6th "	"	"	"	"	Mould on surface increas'd
7th "	"	"	Slight decompos'n no mould	"	Very mouldy not sour

Inf. Calumbæ, B. P.

	I.	II.	III.	IV.	V.
2d day	Unch'g'd	Unch'g'd	Unch'g'd	Unch'g'd	Unch'g'd
3d "	Slightly d'comp'd	"	"	"	"
4th "	Sour	"	"	"	"
5th "	"	Slightly mouldy	"	Mouldy	Mouldy on surface
6th "	"	Decomposition commenced	"	Slightly d'comp'd	Mould increased
7th "	Putrid	Sour	Very slight decomposition	Sour	Odor mouldy, but otherwise unchanged

---

*Read at the meeting of the British Pharmaceutical Conference.

Inf. Gentian. Co., B. P.

	I.	II.	III.	IV.	V.
2d day	Unch'g'd	Unch'g'd	Unch'g'd	Unch'g'd	Unch'g'd
3d "	Decomposition commenced	"	"	"	"
4th "	Sour	"	"	"	"
5th "	"	A little mould on surface	"	A little mould on surface	"
6th "	"	Mould increased	"	Mould very much increased	"
7th "	"	Sour	"	Very mouldy and sour	Mouldy

Inf. Ergotæ, B. P., Made with Cold Water.

	I.	II.	III.	IV.	V.
2d day	D'c'mp'd & putrid	Unch'g'd	Unch'g'd	Unch'g'd	Unch'g'd
3d "	"	Slight dec'mp's'tn no putrid odor	"	"	"
4th "	"	Mouldy	"	Slightly d'comp'd & mouldy	"
5th "	"	Mouldy and sour	"	Mould increased	"
6th "	"	"	"	Mouldy and sour	Mouldy on surface but not sour
7th "	"	Putrid	"	Putrid	Mould increased

The vapor ot formaldehyde was applied to the infusions referred to in columns II and III by passing a fine wire through the cork of the bottle, and attaching to its extremity a tuft of cotton wool moistened with either one or five minims of formaldehyde solution, as the case might be. Each bottle was open daily, and a small quantity of the contents poured out.

On contrasting columns II and III with the corresponding ones IV and V, it will be noticed that putrescence is either retarded or prevented altogether by the antiseptic; but in the former case, in which the vapor is employed, mouldiness is either slight in amount or absent, whilst in the latter, in which the antiseptic is added directly to the infusion, the growth of mould is very conspicuous and advances rapidly. This confirms previous observations that bacteria and pathogenic organisms succumb easily to the influence of formaldehyde, and moulds are very resistant to its inhibitory action. The use of formalin vapor has the further advantage that much less of the antiseptic actually remains in the infusion, for at the end of a week the cotton wool still retains a strong formaldehyde odor. The vapor diffused from the cotton wool probably forms a thin film of liquid on the surface sufficiently charged with formaldehyde to prevent the growth of mould, whilst the infusion beneath contains little or none. It is evident from the above table that 1 minim of formaldehyde solution on cotton wool suspended above the liquid will preserve an infusion for two or three days under the most adverse conditions, and that 5 minims will keep it for a week or more. Under more favorable circumstances, such as exist in most pharmacies, the samples would have kept good for a much longer period. I regard the experiment with ergot as a most severe test, for a cold aqueous infusion of that drug is perhaps more easily putrescible than any other liquid with which the laboratory operator has to deal. This use of formaldehyde in this manner as a preservative for infusions appears to be quite free from objection.

The influence of formaldehyde on vegetable colors is well illustrated in the following experiment. Two samples of infusions of rose petals were set aside, one containing $\frac{1}{10}$ minim formaldehyde solution per fluid ounce, and the other without any addition. After six weeks they were examined. Both were covered with a thick layer of mould. In the one containing formaldehyde the color was unchanged; in the other it had been completely destroyed by the growth of fermentative bacteria.

THE DISINFECTION OF BOOKS BY THE VAPOR OF FORMALIN.

Elmer Grant Horton has tested the efficiency of formalin vapor as a disinfectant for books, and as a result of his experiments has arrived at the following conclusions:

1. Books can be disinfected in a closed space, simply by vapor of commercial formalin by using 1 c. c. of formalin to 300 c. c. or less of air.

2. The vapor of formalin is rapid in its disinfectant action. The effect produced in the first fifteen minutes is practically equivalent to that observed after twenty-four hours.

3. An increase in the amount of air to each c. c. of formalin is not counter-balanced by an increase in the length of time of exposure.

4. In case the disinfection has been incomplete, the vitality of the organisms has been so weakened that they survive only if transferred in a few hours to media, suitable for their development.

5. The use of vapor of formalin is not detrimental as far as observed in any manner to the books, nor is it objectionable to the operator beyond a temporary irritation of the nose and eyes, somewhat similar to that produced by ammonia.—*Medical News, 154.*

BOTANY AND MATERIA MEDICA.

By Prof. H. H. Rusby.

Dr. Fernando Altamirano, who has contributed so largely to our knowledge of the natural history of Mexico, has communicated in an "*Informe que Rinde á la Secretaria de Fomento*," an account of his excursions to the mountains of Ajusco and the Sierra de les Cruces. Among the interesting observations recorded is a brief account of the poisoning of a shepherd-boy apparently by a honey-like fluid deposited upon the leaves of trees by the *Myrmecocystus melliger*, Wesmael. So abundant was the deposit that the trees appeared as though visited by a heavy shower. The boy having chewed a number of these leaves, was seized with violent gastro-intestinal pains, accompanied by vomiting and prostration. He was recovered by the next day. As the identity of the leaves was not stated, it appeares open to question if they were not responsible for the poisoning.

As a prelude to his list of plants collected (and determined by Dr. Jose Ramirez) Dr. Altamirano gives a brief account of the geography, topography and climate of the regions traversed, together with a comprehensive meteorological tables. The list of plants includes a statement of the altitude at which each was collected, its common name and a brief account of the properties of the most important.

Claytonia perfoliata, Don ("Quelite de venado") is eaten as a salad by the Indians.

Calliandra grandiflora, Benth ("Caballitos") is used as an antipaludico, (=antiperiodic ?).

Acæna elongata, L. ("Te Garañón") is used in a tea and considered aphrodisiac. There is, however, no good reason to regard it as other than astringent.

An undetermined species of Rubus called "zarzamora" is noted for its great acidity.

Patentilla candicans, H. B. K. ("Sangregado") has a tannin producing root and contributes in a great part to the formation of the turf of those regions.

A species of Cratægus called "Tejocote" yields an edible fruit.

Ribes jorullense, H. B. K., and *R. Affine*, Willd. ("Saracuacho") are reported to yield emetic fruits.

Garrya ovata, Benth ("Chichicuahuitl") is well known to yield an excessively bitter bark used as an astringent and tonic.

Didymœa Mexicana, Hook ("Ocoxochitl") is very aromatic and is used as a tea.

An undetermined species of Senecio, called "Zempaxúchitl" is said to be poisonous, as is

Pernettya ciliaris, Don ("Capulincillo").

Buddleia Humboldtiana, R. & S. is used to eat as forage for the "reses."

Nectouxia formosa, H. B. K., yields an edible fruit.

The fruits of *Peperomia umbilicata*, R. & P., ("Pimienta de tierra") are pungent, resembling black pepper. Two new species are described by Dr. Ramirez. *Halenia candida* and *Passiflora eslavensis.*

Hesse shows that hyoscine (Ladenburg) and scopolamine (E. Schmidt) are identical, and that the latter name should give place to the former. In extracting this alkaloid from henbane seed, the latter must be ripe, and must be thoroughly broken up, the kernel being the place of deposit.

An account of the Sturtevant Pre-Linnæan Library of the Missouri Botanical Garden forms the subject of a reprint from the seventh annual report of that institution. This library consists of a collection made by Dr. E. Lewis Sturtevant of South Framingham, Mass., and was presented by him to the Garden in 1892. Although of great value to all students of botany, it is especially so to those interested in nomenclature. It was with reference to the history of cultivated plants that the collection was made, so that their publication may be regarded as a contribution to economic botany, and especially to medical botany. The catalogue numbers 861 titles, though quite a number of these result from duplication, under the method of indexing which has been employed.

Prof. D. T. MacDougal communicates in the current volume of *Minnesota Botanical Studies* the results of his laborious investigations concerning the physiology of the root tubers of Isopyrum biternatum (Raf.) T. & G.

The Produce World, (Nov. 29, 1895, p. 93), contains an account reprinted from the *British North Borneo Herald*, of the extraction of gutta percha from leaves and twigs. This process has been patented by M. D. Rigòle. The solvent employed is bisulphide of carbon and about 90 per cent. of the gum, constituting 7 to 10 per cent. of the weight of the leaves, is said to be obtained. A somewhat similar process has just been introduced into Venezuela for the extraction of balata gum. Here the bark as well is extracted and the yield from the tree is nearly one hundred times greater than by the old native process. In other words, the natives lose about 98 per cent. of the product which is obtained by the new process.

In the *Therapeutic Gazette*, (Aug. 15, 462) there is presented a resumé of the studies of E. Stadelmann, concerning chologogues. Dr. Stadelman concludes that "purgatives and drastics" are not chologogues. and enumerates among these, jalap, convolvulin, rhubarb, podophyllin, scammony, calomel and olive oil. The results of such publications as this are well calculated to bring "scientific investigations" into contempt. There is an easier way than studying Dr. Stadelmann to ascertain that these substances are chologogues and it has been followed with unquestionably accurate results by every physician. Dr. Stadelmann concludes that bile and bile salts are the most certain of chologogues. Salicylic acid and sodium salicylate are also highly recommended. He believes that chologogues should not be used in cases of obstruction, as by gall-stones.

THE MAKING OF A HERBARIUM.*

BY CLEMENT B. LOWE, PH.G., M. D.,

QUERY: *A series of practical suggestions are wanted as to the best method of collecting, identifying and preserving plants for a herbarium?*

In answering the above query I would state that it is a pity that more pharmacists are not interested in field botany, as, aside from the valuable information thus to be obtained, the collection of plants is a healthful occupation, and tends to give the outdoor exercise which so many of them need.

In collecting plants a suitable receptacle for containing them is necessary, which should be as nearly air tight as possible, so that the contents can be kept fresh for several days. A japanned tin box about 17 inches long by 7 inches wide and 4 inches deep, with a lid opening nearly the length of the flat side, suspended from the shoulder by a strap, will answer the purpose well.

Many prefer to take a stout portfolio either hinged on one side or fastened on both sides with straps, containing numerous sheets of absorbent paper, and transfer the plants directly to it, as by so doing any injury to the plants is avoided, and the whole can be transferred directly to the press on reaching home.

A knife or trowel for digging is of great use; the best is probably a trowel in which the V shaped grooved blade is driven directly into the handle. Professor Maisch used to carry a convenient cane with a nickel plated handle shaped like a narrow grubbing hoe.

SELECTION OF SPECIMENS.

In collecting plants care should be taken to collect specimens which are typical of the species, and yet variations from the typical form are also instructive and can be mounted by their side.

We always desire to obtain the inflorescence, and frequently also the fruit, as in some cases the latter is quite as or more important than the flowers, as in the case of the umbelliferæ, where the distinction between the genera is based largely upon the fruit.

In the case of many plants the radical (root) leaves should be gathered, as they are more characteristic than those growing upon the stem—*e. g.*, shepherd's purse has the root leaves clustered, and pinatified or toothed; while the stem leaves are arrow-shaped and sessile,

The root or rhizome should generally be gathered, as in a number of cases it is the official part of the plant, and it frequently has prominent characteristics; in the case of rare plants it is best not to do so, as some herbaceous perennials, like senega, have in this way been almost exterminated.

There is often quite a choice as to where your botanical excursion shall be made, different regions showing different floras. Those living in the neighborhood of Philadelphia will find quite a difference between the floras of Pennsylvania and New Jersey, and no herbarium of this region would be complete without representatives from both localities.

EXAMINATION AND IDENTIFICATION OF PLANTS

After the plants are collected, the next step is their examination and the identification of unknown species. To do this successfully one should have a sharp penknife, a pair of dissecting needles, a pair of pincettes and a dissecting microscope, the best of the latter being one which has immovable hand rests, like Barnes', although Sayre's dissecting microscope, while not so convenient in the laboratory, can be used in the field as well.

---

* Read before the Pennsylvania Pharmaceutical Association at Mount Holly Springs.

In the examination of an unknown plant, the height, shape and epidermis of the stem should be considered, and whether endogenous or exogenous, although in most cases the venation of the leaves will show the latter just as well. The leaves should be examined as to phyllotaxy, venation, shape and size. The flowers should be examined as to the parts present, their size, shape, color, union, insertion, etc., and then vertical and transverse sections should be made, notes being made of the different observations.

When this has been done the name can in most cases be speedily determined by means of the analytical key in the front of "Gray's Manual of Botany."

Beginners will find it easier to analyze regular flowers of fair size, such as the corn cockle (*Lychnis Githago*), which is frequently found in wheat fields to the annoyance of the farmers, or what is still better, is for the first time to take known flowers like the apple blossom or wild rose, find the description in the "Manual" and compare it carefully. After this has been done a number of times they will be better able to proceed with unknown flowers.

BOOKS TO USE.

To those with but little knowledge of botany will find Mrs. Dana's "How to Know the Wild Flowers," in which they are classified according to color, and many of them illustrated, an interesting book, while if they desire to increase their knowledge they will find Professor Bastin's "Laboratory Exercises in Botany" a most valuable work. Gray's "School and Field Botany" (revised edition) is also an excellent work, not so technical as the "Manual," and it includes many of the cultivated as well as wild flowers.

The next step is

THE PRESERVATION OF THE SPECIMENS.

They should be dried between sheets of absorbent paper with heavier sheets occasionally interspersed, sufficient pressure being made by means of weighted boards.

Perhaps a better arrangement for drying is to use for top and bottom an open frame or lattice work, each frame consisting of two layers of ½ inch strips crossing each other at right angles, having a hook in the end of each strip. The sheets of drying paper are laid between the frames and the proper pressure is made by means of a stout cord passing around the hooks the whole being hung where there is a current of air.

In the case of hollow leaves like the sarracenia (*pitcher plants*), or flowers like stemless lady's slippers (*cypripedium acaule*), absorbent cotton should be placed in them to facilitate drying and to preserve their outlines.

Specimens should be dried as rapidly as possible to preserve their color and general appearance, and the driers should be changed every day for five days; still better results will be obtained by changing them two or three times during the first 24 hours.

According to Schroeder (*Amer. Jour. Pharm.* 1896, p. 134) heavy gray felt paper saturated with a 3 per cent. solution of oxalic acid and allowed to dry, will preserve unchanged the color of the petals, and in most cases the green of the leaves.

When the plants are thoroughly dried they should be poisoned by applying a nearly saturated solution of corrosive sublimate in alcohol with a soft brush, the plants being laid upon a flat dish and afterward placed between driers until the alcohol evaporates.

Then follows the mounting of the specimens. Sheets of white paper 11½ x 17¼ inches, about 30 pounds to the ream of 480 sheets, are best for this purpose. They should be fastened to the sheets either by narrow strips of isinglass plaster, or better, directly by means of a plasliquid glue like Le Page's.

To the right hand lower corner of each sheet should be affixed a label something like the following, which for the purpose of illustration is written out as it would be if affixed to the plant *chelidonium* :

HERBARIUM, C. B. LOWE.

Bot. Name,	*Chelidonium majus.*
Synonym,	*Celandine.*
N. O.,	*Papaveraceœ.*
Locality,	*Tulpehocken*, 4, 22, '96.

Each specimen or all of the same species may be inclosed in a sheet of white paper of less weight than that upon which they are mounted.

All of the species of the same genus should then be inclosed in a genus cover of heavy manilla paper.

The name of the genus, with that of the natural order, should be written in a large hand upon the lower left hand corner of the cover next the back. The name of the inclosed species can be written upon the lower right hand corner. The genera can also be numbered according to "Gray's Manual."

The herbarium should be preserved in a suitable receptacle free from dust. This may consist of a cabinet with shelves of the proper width and depth for the genus covers to slide in easily or of a number of plain boxes with shelves 4 to 6 inches apart, and doors which shut flush. The names of the orders can be pasted upon the shelves or affixed to the edge of the genus board, which contains a list of the genera of the order. and is inserted at its beginning.—*Amer. Drug. and Pharm. Rec.*

THE EFFECTS OF CLIMATE AND SOIL ON OILS OF PEPPERMINT.*

By John C. Umney, Ph. C., F. I. C.

In the discussion following the paper on black and white peppermint oils read at an evening meeting of the Pharmaceutical Society in February, 1896 (*Ph. J.*, lv., 11, 123), I stated that I was in correspondence with distillers in the United States with a view to ascertain the varieties chiefly cultivated there and to determine the effect of climate and soil on the essential oil of plants of the same varieties cultivated in different countries.

It will be remembered that the principal difference found between black and white Mitcham (England) oils was in the proportion of esters of menthol present, the latter being as high as 14 per cent., whilst the former usually does not exceed 7 per cent. I have since had the opportunity of confirming these ester percentages in other samples, and although they may be to some extent modified by the method of distillation, they appear to be distinctly characteristic of the two varieties. I have not succeeded in obtaining an authentic sample of oil distilled from white peppermint in the United States, but I have obtained samples of oil distilled from plants grown in America from black Mitcham roots and Japanese roots respectively. The samples of oil distilled in the United States from black Mitcham plants vary in ester percentage somewhat, but the ester percentage in the Wayne county is in each instance higher than the Michigan—the other figures showing but slight variation.

Oils distilled from Black Peppermint (Mentha piperita).

Grown in	Sp. gr. at 15° C.	Optical rotation in a tube of 100 M. m.	Menthol as Ester.	Total Menthol	U. S. P. color reaction, (2 C c. of oil with 1 C.c. glacial acetic acid and one drop nitric acid.)
			p. c.	p. c.	
Surrey (Mitcham	.9036	—25.5	3.7	63.1	Light blue.
Lincolnshire (Market Deeping)	.9072	—28.5	5.0	62.7	Light blue.
Michigan, South	.9095	—31.0	3.2	71.0	Blue with copper fluorescence.
Michigan, North	.906	—30.0	8.1	63.0	Blue with copper fluorescence.
Wayne Co., N. Y.	.9095	—27.0	10.8	59.1	Intense bluish-violet with copper fluorescence.
" "	.908	—26.5	12.2	58.4	Very intense bluish-violet with magnificent copper fluorescence.

The ester percentages of the American oils are higher than usually found in black peppermint oil from plants cultivated in this country, but the physical characters and total menthol are very similar. The plants grown from Japanese roots (*Mentha arvensis* var. *piperascens*) are much cultivated on account of the larger proportion of oil they yield per acre. The specific gravity from .902 to .905, and the percentage of esters of menthol present are low, one sample yielding only 2.5 per cent., the lowest ester percentage I have obtained in any peppermint oil.

Oils distilled from Japanese Peppermint (Mentha arvensis var. piperascens.)

Grown in	Sp. gr. at 15° C.	Optical rotation in a tube of 100 M.m.	Menthol as Ester.	Total Menthol	U. S. P. color reaction, (2 c. c. of oil with 1 c. c. glacial acetic acid and one drop nitric acid.)
			p. c.	p. c.	
Michigan, U. S. A.	.9027	—27.8	2.5	66.0	Pale violet tinge on standing.
Michigan, U. S. A.	.904	28.5	3.1	68.4	Ditto
Kent, England	Insufficient for determination				Pale violet coloration
Japan, (normal)	.9062	—35.25	5.8	70.6	Violet coloration.
Japan, (normal)	.902	—39.00	2.8	72.2	Pale violet coloration

In the paper previously referred to mention was made of the U. S. P. color reactions for peppermint oils, as affording striking differences between oils of high and low ester value—taking the white Mitcham oils as the one extreme and Japanese oil as the other extreme—and it has been noticed in continuing the examination of these freshly-distilled oils that the intensity of the colorations produced by acids follows the ester percentage without exception. The color reactions of peppermint oil with various acids was first noticed by Flückiger (*Ph. J.* [3], i., 682) and was subsequently the subject of considerable experiment by Frebault (*Ph. J.* [3], iv., 978), who regarded the reaction as dependent upon the coloring matter contained in the oil of peppermint—a comparison being instituted between the behavior of these bodies and chlorophyll under similar conditions. Roucher stated (*P. L.* [3], v., 393) that the reaction was not due to menthol, and Flückiger and Power ('Year-Book' 1880, p. 469) suggested that the color might be due to substances combining with alkaline bisulphites. More recently Polenske has investigated the matter, coming to the conclusion that the reaction is probably due to phyllocyanin.

---

* Read at meeting of British Pharmaceutical Conference.

It was shown in the paper on black and white peppermint oils already referred to that after the removal of the esters from white oil the color reactions with acid were much less intense, and experiment also shows that the view of Flückiger and Power, that it is dependent upon aldehydic bodies, is incorrect, as oils give nearly as intense color reaction after treatment with acid sulphite of sodium as before. Moreover, after reduction with zinc dust, intense color reactions can still be obtained with acids. In order to determine whether the condition of the herbs for distillation rather than the different varieties causes the differences in these reactions, I have distilled a small quantity of fresh Japanese peppermint (*Mentha arvensis* var. *piperascens*) grown at Sevenoaks, and kindly given me by Mr. Holmes, and the behavior of this oil with nitric acid in glacial acetic acid solution is precisely the same as in the oils distilled from the same species grown in Japan and America, the palest violet coloration being produced. It seems unquestionable, therefore, that this very slight color reaction may be considered as typical of oils of Japanese peppermint (*M. arvensis* var. *piperascens*). It is also curious that if the reaction be due phyllocyamin, that this body should be obtained in larger quantity from both varieties of *Mentha piperita* than *M. arvensis* var. *piperascens*. It should be noted also in this connection that, by repeated distillation of the oil under reduced pressure, the intensity of these reactions is not diminished.

From the results above recorded it seems possible that the oil produced in America from Mitcham black peppermint plants is slightly modified, and in certain districts the ester percentage materially increased. The higher ester value of French than English lavender oils has been discussed in my paper on essential oils (*Ph. J.* [3], xxv., 980), and the opinion expressed that ester determination may be taken as a basis of comparison of oils of the same type. The softness of the French lavender oil compares with the pungency of English oil much as does a higher ester white Mitcham peppermint oil with a black Mitcham oil, or more markedly still a Japanese oil. It is unlikely that the higher ester percentage of many Wayne County as compared with Michigan and other American oils is due solely to superior methods of distillation.

It is unfortunate that the American oil so frequently contains spearmint and erigeron oils, as they depreciate considerably the value, even though the menthol ester percentages are high. The difference in climate and soil appears to effect but little alteration in the oil distilled from plants grown in England and America from Japanese roots, the total menthol percentage being only slightly reduced. I am indebted to Mr. Hartford, of New York, for samples of various American oils and plants, and also to Mr. T. Christy, for peppermint plants of the different varieties.

LIQUOR AURI ET ARSENII BROMATUS.*

BY R. WRIGHT, F. C. S., PH. C.

In this note attention was drawn to the uncertainty attending the dispensing of the above preparation owing to existing formulæ yielding products differing materially both in strength and composition and to the desirability of substituting a direct method under the authority of some representative body for the indirect methods at present in use. The preparation is usually made with Clemen's solution—the liquor arsenii bromatus of the United States National Formulary as the starting point; and the author of the paper gave an outline of the published processes for this liquid, and showed wherein they differ.

The original formula for Clemen's solution was as follows:

Take of—

Arsenious acid	80 grains
Potassium carbonate	80 grains
Bromine	160 grains
Distilled water	15½ ozs.

For the production of the liquor auri et arsenii bromidi the process given in Martindale and Westcott's 'Extra Pharmacopœia' is as follows:

Take of—

Clemen's solution	192 minims
Gold Bromide	1½ grain
Distilled water to	1 fl. ounce.

The drawbacks to this process are (1) the Clemen's solution must be specially prepared, and (2) there is sometimes a difficulty in obtaining a perfectly soluble bromide of gold.

---

*Read at the meeting of the British Pharmaceutica Conference.

For a direct process, in which these difficulties are avoided, the author proposes the following:

Take of—

Arsenious acid, in powder	40 grains
Potassium carbonate	40 grains
Bromine	100 grains
Gold in leaf	13.5 grains
Distilled water, sufficient for	1 pint.

The arsenious acid and potassium carbonate are placed in a flask with four ounces of the water, and boiled until solution is completed. The gold leaf is introduced into a wide mouthed bottle, twelve ounces of water added, and the bromine run in, and the whole shaken until the latter is dissolved. The solution previously made is added, and the mixture shaken for a few seconds. The liquid is transferred to a flask or retort, and excess of bromine removed by boiling. The solution is then allowed to cool, and is subsequently diluted with distilled water to the required volume, and filtered. Traces of silver chloride are formed during the process, derived from impurities present in the materials employed. The usual dose of the preparation is from 5 to 10 minims. The maximum dose contains about $\frac{1}{32}$ grain gold tribromide, and a quantity of arsenium, in combination, equal to $\frac{1}{24}$ grain arsenious acid.

DISCUSSION.

Mr. Martindale said he had found that the Clemen's solution which was kept by many chemists could easily be used to convert the preparation into a solution that would be of the same strength as the preparation used in America. The formula he had published was one that could be used extemporaneously without any difficulty. Mr. Wright got at more definite results by manufacturing bromide of gold direct from gold leaf. It probably took a little time.

Mr. Wright said it took half an hour, and the excess of bromide could be easily removed.

Mr. Conroy said this paper was evidently prepared with the idea of showing pharmacists how to make their own preparations, but he could assure the author that wholesale firms would not be above learning from it. After trying to make this preparation by the American method and being disappointed, he had recourse to Mr. Martindale's 'Extra Pharmacopœia,' and was soon put right. Still he had no doubt that this direct process was superior, and that manufacturers would take advantage of it.

Mr. Martin thought this formula would probably prove very useful, and they would all sympathize with the efforts of everyone who sought to enable chemists to make their own preparations, and this was one of the great objects of the Conference.

Mr. MacEwan said the new United States National Formulary had a recipe for this preparation which differed materially from Mr. Wright's, and it seemed a pity that the two great Anglo-Saxon pharmaceutical associations should not work on parallel lines. The American recipe started with arsenious acid and bromine, and the solution was made by boiling, and to that tribromide of gold was added and a solution made of that, which was then filtered, and a certain amount of bromine added, the excess of bromine being driven off by heat. The resulting preparation contained $\frac{1}{16}$ grain of arsenium per drachm. The great difference in Mr. Wright's preparation was that it was strongly alkaline, whilst the American contained no free alkali. The name also was different — liquor arsenii et auri bromi, meaning that it was a solution of arsenium and bromide of gold. No doubt bromide of gold existed in it, but there was no such thing as arsenium bromide in aqueous solution.

Mr. Wright regretted he had not seen the new edition of the National Formulary to which Mr. MacEwan referred, or he should have mentioned it in the paper. His solution was not alkaline.

Mr. MacEwan said the American formula did not contain carbonate of potash or any other alkali.

Mr. Wright said there would be no free carbonate in his solution. He had not attempted to determine its composition, but he should imagine it was rather uncertain. There was bromide of potassium, and if you added silver nitrate solution to the liquor auri the bromide came down first; you got almost all the bromide precipitated before the arseniate came down and filtered that off. He judged there would be in the solution tribromide of gold, arseniate of potassium, bromide of potassium, and in addition there would probably be a trace of hypobromide or bromate, perhaps both. On adding gold leaf to the bromide solution the gold leaf did not dissolve at once, proving that it was necessary to have some oxidizing agent present. If, after adding the gold leaf to the bromide solution, you put in the solution first made, the solution of the leaf was effected at once. The precipitate was silver chloride, which he was at first puzzled to account for, but the silver evidently came from the gold and the chlorine from the bromine.

“ MONONITROGUAIACOL.”

BY RAPHAEL MELDOLA, F. R. S.

In the course of some investigations on phenol derivatives, not yet complete, the author had occasion to prepare mononitroguaiacol. As this compound does not appear to have been described before, and as the author learns that other investigators are engaged on the same subject, the following note on the method of preparation may be found of use. The difficulty in nitrating guaiacol directly is to prevent the nitration going too far, so as to avoid the formation of dinitroguaiacol on the one hand, or, on the other hand, complete destruction of material. The action of nitric acid on guaiacol is rendered quite manageable by acetylating or benzoylating the compound as a preliminary step. The acetyl derivative is an oil (Tiemann and Koppe, *Ber.* 14, 2020); the benzoyl derivative is readily formed by the action of benzoyl chloride on guaiacol in the presence of sodium hydroxide in aqueous solution. Crystallized from dilute alcohol it forms small rhombohedra, melting 58 to 59°. In order to nitrate the acetyl derivative, it is mixed with about an equal volume of glacial acetic acid, and a considerable excess of fuming nitric acid is gradually added to the well-cooled mixture. It is advisable to dilute the nitric acid at first with glacial acetic acid, but the undiluted acid may subsequently be added in small portions, if the contents of the flask are not allowed to become warm. The condition essential for success may be briefly described as being rapid nitration at a low temperature; if allowed to stand too long dinitroguaiacol is formed. The great excess of nitric acid is necessary to form the mononitroderivative rapidly. The whole operation takes from one and a half to two hours, and the completion of the nitration is best ascertained by stirring a few drops of the solution vigorously with water on a watch-glass. If the oily deposit does not solidify on being stirred with water in the course of a few minutes, more nitric acid is required; when the oily drops soon become crystalline und the conditions mentioned, the whole contents of the flask must be stirred into cold water in a thin stream, and allowed to stand for some hours. The solid mononitroguaiacol acetate is collected, washed with water, and purified by crystallization from boiling water. The compound separates on cooling in small, whitish needles, having a melting point of 101 to 102°.

0.0985 gave 5.6 c. c. moist nitrogen at 13.5° and 764.8 mm. =6.73. The formula $C_6H_3 . NO_2 . OCH_3 . OC_2H_3O$ requires N =6.63 per cent.

It is probable that two nitro-derivatives, an ortho- and a para-, are formed during this process, but the orthonitro-compound is present only in small quantity, and is removed by the process of crystillization. The final product is most probably the paranitro compound, $C_6H_3 . NO_2 . OCH_3 . OH$ (4: 2: 1), for reasons that will appear subsequently. The acetyl derivative is readily hydrolyzed by boiling with dilute caustic alkali for a few minutes. An orange solution of the alkaline salt of nitroguaiacol is obtained, and, on acidifying, the nitroguaiacol separates out in the form of whitish, ochreous needles. After purification by crystallizing from hot water, it has a melting point of 104°.

0.0732 gave 5 c. c. moist nitrogen at 12° and 771.2 nm. = 8.22. The formula $C_6H_3 . NO_2 . OCH_3 . OH$ requires N =8.27 per cent.

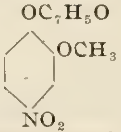
Benzoylguaiacol is nitrated in acetic acid by the same method as that described for the acetyl derivative, and, on the whole, is a more satisfactory compound to work with. The first action of the nitric acid is the formation of an oily product, which does not solidify in water, possibly a nitrate. When sufficient nitric acid has been added, the oily deposit solidifies in water, as before, but vigorous stirring on the watch glass is necessary to promote crystallization. The benzoylnitroguaiacol thus obtained consists of a mixture of two modifications, which can be separated by crystallization from alcohol. The chief product which separates out first consists of prismatic needles, melting at 102 to 103°. The mother liquor deposits the other modification on standing, in the form of rhombic plates, which, after two or three crystallizations from alcohol, have a melting point of 88 to 89°,

0.0976 (needles) gave 4.15 c. c. moist nitrogen at 14.5° and 765.9 mm. = 5.01.

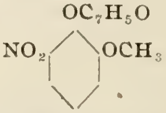
0.1078 (plates) gave 4.8 c. c. moist nitrogen at 19° and 764.1 mm. = 5.12.

The formula $C_6H_3 . NO_2 . OCH_3 . OC_7H_5O$ requires N= 5.12 per cent.

Although no direct proof of the constitution of these two nitro-derivatives has been obtained as yet, there is every reason for believing that they are the ortho- and para-compounds.



M. p. 102—103°



M. p. 88—89°.

This view, so far as relates to the para-compound, is borne out by the fact that the nitroguaiacol of m. p. 104° obtained by the hydrolysis of the acetyl derivative of m. p. 101 to 102°, gives the same benzoyl derivative (m. p. 102 to 103°) on treatment with benzoyl chloride and alkali in the usual way. It may be pointed out that the paranitro-derivative has been prepared more especially with a view to the direct synthesis of eugenol and related compounds, since the replacement of the nitro-group by halogens, and subsequently by allyl, should give rise to the formation of benzoyleugenol.—*Proc. Chem. Soc.*

ESSENCE OF RENNET.[*]

By. J. A. Forret.

A formula for a satisfactory essence of rennet must provide for a preparation that will pass through a filter within a reasonable time and produce a bright filtrate — that is, an infusion not of a glairy or ropy consistence; and further, a finished article that will keep bright and sweet for a considerable time. The following formula is the result of experiment, and provided the calves' stomachs are in proper condition, the resulting essence leaves nothing to be desired. As the stomachs vary in size and rennet-value, it is advisable to treat three or more at a time. They should be dry and preserved with salt; the proper article is obtainable from any reliable butcher:

For three stomachs, take of—

Salt	15 ounces.
Boric acid	¾ ounce.
Rectified spirit	15 ounces.
Water	150 "

Open the stomachs and retain as much of the salt as will adhere to the inner surface, cut into small pieces, and macerate for about an hour with frequent stirring or shaking, in 50 ounces of water in which five ounces of salt is dissolved; strain through muslin and repeat maceration twice with same quantity of brine, dissolve the boric acid in the mixed strained liquors, add the spirit and filter.

Without the addition of some such medium as kaolin, filtration through paper is very slow, and the first few ounces that pass must be returned. With about an ounce of kaolin or precipitated chalk diffused through the essence, and a double filter-paper supported in the funnel by tow and moistened with water, filtration is fairly rapid, and only the first two or three drachms of filtrate slightly turbid. Prepared as above the color of the essence is objectionable; it varies from a very pale straw tint to what is practically colorless. For this I have found a simple remedy in merely bringing up the color to a pronounced straw by the addition of a very small quantity of saffron. One drachm of the essence is sufficient for a pint of milk, and if stored in bottles that are full and well corked, a fairly firm curd will be produced by the same quantity, though the rennet be ten or twelve months old. By re-maceration sufficient exhaustion is effected in a few hours, and this seems to be the principal factor in producing a preparation free from "ropiness."

THE DETECTION OF ACETANILID IN SOME CLOSELY RELATED SYNTHETICAL COMPOUNDS.

Frank X. Moerk has tested the applicability of E. Hirschsohn's test for acetanilid in phenacetine and more or less closely related compounds. Hirschsohn claims that five per cent. or more can readily be identified by making a saturated aqueous solution, and adding to this half a volume of bromine water. Antifebrine decolorizes the bromine water immediately, and in a few moments a crystalline precipitate appears. Phenacetine, on the other hand, is stated neither to decolorize the bromine nor form a precipitate. Moerk finds that lactophenine, exalgine and phenocoll likewise produce precipitates, so that the reaction is not very characteristic for acetanilid. Differences, however, exist with regard to the solubility of the precipitates in petroleum ether.

The isonitrile test as applied by others gives results which can be improved upon by the addition of potassium permanganate. Acetanilid gives the characteristic isonitrile odor, phenocoll gives a faint odor but different from the isonitrile, whereas the others, when pure, yield tests destitute of ordor.

"0.1 gm. of methacetine, phenacetine, lactophenine, salophenen or phenocoll hydrate are boiled with 10 c. c. of water (salophen is the only one not soluble in 10 c. c. boiling water); then cooled quickly by immersion in cold water and filtered through cotton. To 2-3 c. c. of the filtrate add an equal volume of the 5 per cent. solution of potassa (or soda), boil and add small fragments of potassium permanganate until the green color first produced gives way to a violet or purple after boiling; then add two or three drops of a mixture made of chloroform 10 c. c., alcohol 10 c. c. and water of ammonia 0.5 c. c.; boil and again add some of this mixture if the permanganate has not been reduced completely to brown manganic hydrate; after the chloroform has vaporized by standing a few moments, note the odor and compare it, if doubtful, with that yielded by a dilute acetanilid solution. In testing exalgine omit the potassium permanganate."—*Am. Journ. Pharm. 68, p. 389.*

---

[*] Read at the meeting of the British Pharmaceutical Conference.

STANDARDIZING OF NORMAL ACID BY BORAX.

By FRANCIS BERGAMI.

More than thirty years ago, Th. Salzer recommended the use of borax for the alkalimetric measurement of acids, but his proposition attracted very little attention until E. Rimbach[*] published his work on the determination of the atomic weight of boron. Since that time, several other chemists have tried to introduce the use of borax for the standardizing of normal acid, but they all propose either methyl orange or litmus as indicators for this purpose. Mr. L. F. Kebler stated some time ago, before the Chemical Section of the Franklin Institute, that methyl orange proved to be of inferior value in his hands, as well as in the hands of other chemists. Litmus enables one to obtain satisfactory results, but it requires a great deal of practice, as the change of color in borax solutions is not as distinct as could be desired for routine work, especially by inexperienced workers. I am, therefore, surprised that so little attention seems to have been paid to the researches of Robert T. Thomson,[†] on larmoid.

Thomson found that larmoid, while its properties as an indicator are nearly the same as those of methyl orange, excels the latter substance by far in regard to sensitiveness, and allows an absolutely correct titration of the alkali in borax solution. A double recrystallization of the commercial c. p. borax yields a strictly pure product, and by the aid of this and larmoid as indicator, the standardizing of normal acid becomes not only a very convenient, but also an extremely accurate operation.—*Journal of the Franklin Institute.*

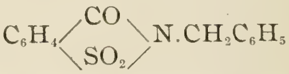
A NEW METHOD FOR DETERMINING THE MELTING POINT.

In the course of legal analysis where it became necessary to examine carefully very small quantities of stearin and other candle material upon pieces of clothing, and where the quantity of material was so small, that the use of capilliary tubes was impossible. VanLedden-Hulsebosch devised the following method: He laid some pieces of the cloth on which the fat was detected in a small aluminum capsule, and floated this upon water in a large breaker. He then heated this water bath very carefully, and suspended in it a thermometer so adjusted that only the upper portion of the water affected the thermometer. Slowly raising the temperature, he kept a close watch on the thermometer and upon the grease under examination, and was thus enabled to determine with considerable accuracy both its melting and congealing points. —*Sci. Am.*

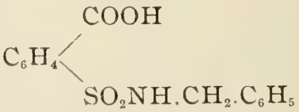
THE CHEMISTRY OF SACCHARIN.

By ECKENROTH & KOERPPEN.

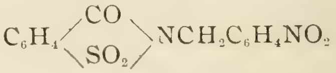
In a lengthy paper on some new derivatives of saccharin, the authors state that they have prepared the benzyl derivative.



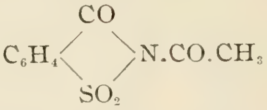
by drying the sodium compound of saccharine at 150°, and boiling with excess of benzyl chloride under a reflux condenser for 20 hours. The resulting compound crystallizes in needles melting at 118°. It does not possess sweetening properties. Benzyl o-amido-sulpho-benzoic acid—



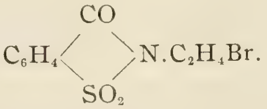
was prepared from the above described body by heating for some time with alcoholic soda. The sodium salt crystallizes in rosettes and the barium salt is a fine micro-crystalline powder. The authors also prepared p nitro-benzyl saccharine—



by heating to 200° a mixture of dry sodium-saccharine and p-nitrobenzyl chloride. It forms fine needles melting at 176° It is insoluble in water, slightly soluble in cold and easily in hot alcohol. Several other interesting nitro-derivatives are described. The acetyl derivative—



is prepared from sodium saccharine and acetyl chloride. The chief product of the reaction between sodium saccharine and ethylene bromide is bromethyl-saccharine—



It forms white glancing needles melting at 96°, insoluble in water, but easily soluble in the usual organic solvents-—*Berichte.*

---

[*] *Fresenius' Zeitschrift*, 32, 526.
[†] *Chem. News*, 51, 18.

The Alumni Journal

Published Monthly under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. SEPTEMBER, 1896. No. 9.

SUBSCRIPTION:

Per Annum,	One Dollar
Single Copies,	15 Cents.

All communications relating to subscriptions for the Journal, should be addressed to Nelson S. Kirk, 9 East 59th Street, New York City.

All communications intended for the Editor, original contributions, exchanges, books for review, etc., should be addressed to
Alfred H. Mason,
59 Maiden Lane,
New York City.

All communications relating to advertisements or to the business of the Journal, should be addressed to
Thomas M. Davies,
543 Third Avenue,
New York City.

All copy for publication, (written on one side of the paper only), or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

EDITOR.
ALFRED H. MASON, Ph. C., F. C. S.
CONTRIBUTORS:
Alumni Association,
WM. HOBURG, JR., PH. G., 115 West 68th St., New York.
Alumni Notes, Socials, etc., and Classes prior to '93.
GEO. F. BURGER, PH. G., 115 West 68th St., New York.
Bibliography,
ADOLPH HENNING, PH. G., 68 William St., New York.
Class of '93,
EUGENE F. LOHR, PH. G., 375 Third Ave., New York.
Class of '94,
NELSON S. KIRK, PH. G., 9 East 59th St., New York.
Class of '95,
B. DAUSCHA, PH. G., Caldwell, N. J.
Class of '96,
J. HOSTMAN, 204 Bowers St., Jersey City, N J.
Class of '97,
Q. E. D.
Legal Notes,
H. A. HEROLD, 34 Pine St., New York.
Post Graduate Class of '96,
HARRY B. FERGUSON, PHAR. D., 90 Maiden Lane, N. Y.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

IT has been declared unadvisable to have another "Alumni Outing" this season.

THE sixty-seventh course of lectures to be delivered in the College will begin on Monday, September 28th, 1896. A reception will be given the Junior Class at 7.30 P. M., and the Faculty look for a large attendance of members of the College and their friends to welcome the new students.

THE sympathy of our members will be with Prof. George C. Diekman in his recent bereavement.

THE prospectus of the College for the 68th session, 1896-97, has been issued and should be carefully studied by every member of the Alumni and of the College. On page 5, line 5 instead of "have been its own graduates. From small" please read, "have been its own graduates, from small." The important changes announced (see pages 8 and 20) show that the Trustees are disposed to make our College one of the most progressive in the country.

AGAINST the views of the Faculty, the majority of the Lecture Committee, the President and majority of the Trustees, who were asked, and the petition of the Post-Graduate Class, the abbreviation P. D. appears in the prospectus for Phar. D. Who is responsible for this arbitrary action?

IN his report as chairman of the delegation from the College at the Denver meeting of the A. Ph. A., Mr. Seabury once again called attention to the disadvantages to the College which arose from the absence of its Professors. It will be gratifying to Mr. Seabury and the members to notice that three of the Professors were present at the meeting in Montreal.

A. PH. A.

The 44th annual meeting of the American Pharmaceutical Association was held at Montreal, Canada, August 12th to 19th. The attendance was comparitively small, about 200 signed the register.

The delegation from the College comprised A. H. Mason, Profs. Rusby, Coblentz, Jelliffe and Chas. Holzhauer. Thos. F. Main represented the Alumni Association; other members present were W. O. Allison, W. C. Alpers, G. Gregorius, Prof. J. U. Lloyd, (Corresponding) Caswell A. Mayo, John M. Peters and George J. Seabury who was chairman of the Commercial Section.

Dr. Charles Rice, chairman of Committee for Revising U. S. Pharmacopœia was unable to be present.

Prof. Sadtler was chairman of the Scientific Section, and W. C. Alpers, secretary.

The report of the special "Committee on Research," presented by Prof. A. B. Prescott was of great interest and the work accomplished of the highest scientific import.

Among the papers read in this Section were "History and Names of *Rhamnus Purshiana*" by J. U. Lloyd, and "Strophanthus Seeds" by S. E. Jelliffe.

The Section on Education and Legislation held two sessions. C. S. N. Halberg, chairman.

W. C. Alpers, M. D. was elected chairman. and Prof. Coblentz, secretary of the Scientific Section. Prof. Coblentz was also elected a member of the "Research Committee" for one year.

Prof. Rusby was elected chairman of the Committee on the Ebert Prize.

It will be of interest to the Alumni to know that W. A. Frost, Class of '77, now of St. Paul, Minn., was elected 2d Vice-President of the Association. Mr. Frost is also president of the Minnesota State Board of Pharmacy.

Prof. J. E. Morrison, of Montreal, is the new president of the Association.

RESULTS OF FOLLOWING THE RULE OF PRIORITY IN PLANT NAMES.

BY PROF. H. H. RUSBY.

In an editorial in the *Pharmaceutical Journal* (January 18th, page 52), entitled "The 'Index Kewensis' and Botanical Nomenclature," occurs the following statement: "The decade 1885 to 1895 has been a very busy one, not only for would-be reformers of botanical nomenclature, who have probably added some fifty thousand names to the already appalling synonomy of previously described plants," etc.

Further on the critic admits the general acceptance of the rules, but with the provision that well-known and accepted names should not be disturbed. It would appear, therefore, that "fifty thousand" synonyms are regarded as the difference between the results of the rigid following approved of by the "would-be reformers" and those of their limited acceptance by the would-not-be reformers. It can hardly be that so extreme a view can be entertained, and we must read the above number as applying to all the synonyms resulting from the most rigid following of the rules of priority.

Without desiring to continue an argument as to the desirability or undesirability of rigidly following the rule of priority, upon which subject it has now virtually been agreed to disagree, we feel ourselves called upon to take exception to the evident bearing of the above remarks upon the objects sought by the reformers of botanical nomenclature and upon the results of following their advice. It is worth while to remark in passing that the limited acceptance of these rules has been unwilling, and has been stubbornly fought by the same representatives who now oppose their full acceptance. If the partial reform is now to be regarded as satisfactory it certainly entitles those who have effected it to respectful, if not grateful mention. It is not true, as invariably stated by the disputants upon the other side, that the object or result of observing priority is to increase synonymy. Upon the other hand, the first object in view by most of those who advocate it, is to prevent such increase, and it is safe to say that but for this object the proposition would find but a small following. Present synonymy is, as stated by the above writer, "appalling," resulting in their now being some 700,000 names for 200,000 plants, but it has nearly all resulted from a failure to observe the rule of priority. If such a result has occurred in the past, a continuance of the cause will continue to augment the result. The enforcement of the rule of priority, while it will undoubtedly result in a sharp increase in the number of synonyms for the immediate present, will almost entirely cut short their multiplication in the future. For this conclusion we are not obliged to depend upon speculation, as we have a perfect precedent in the experience of the zoologists. The success attained in this direction by the workers in that branch of science is one of the most frequent and powerful arguments used by those who favor priority, yet we do not remember to have ever seen any reference made to it by those who argue upon the other side.

But this is not the only, nor the most important result hoped for from the rigid enforcement of the rule of priority. If, for example, the "Index Kewensis" had been based upon such a rule it would unquestionably have paved the way for the intelligent use of plant names, without the necessity of appending the name of the author, a practice which in the present state of affairs would make botanical writings in this department largely unintelligible. It is, of course, impossible to ever annihilate a synonym once made. It must continue to be in existence as long as it remains in print. But there is a way to practically annihilate it by rendering it inoperative. If, therefore, the ideas of the advocates of priority are to be fairly interpreted it must be said, not that they aim to add fifty thousand, or any other number of synonyms to encumber the ground, but that they hope to remove therefrom all synonyms, and to leave each plant with but one recognized name. For the statement quoted above, this should be substituted: "They would remove five hundred thousand synonyms." It is because it is believed that this result can never come from any halfway measures that the rigid enforcement of the rules is insisted upon. That the most rigid following of the rule of priority is to prevail in the United States there appears not the least doubt, and we fully expect to see our botanical names written in the near future without the use of the author's name, reference being made to the list officially printed as indicating the sense in which such names are used.

BEFORE giving a report either of a microbic or chemical nature upon samples of water, make strict investigations as to the sources of supply and all its surroundings.

Class Notes.

'93 NOTES.

PETER FREEZE, JR., has bought the store of Mr. H. Schmelz, corner of 38th street and Third avenue. He says trade is very good and exceeds his most sanguine expectations. I am sure the whole class join me in wishing him every possible success.

OUR friend "Tanny," after rusticating in Clinton Corners, N. Y., has purchased the store of Mr. Weiss, 106th street and Madison avenue. He looks supremely happy now, and why shouldn't he? We can only repeat the good wishes applied to Brother Freeze.

LESTER CARDE, he with the undiagnosable brogue, is with Disosway & Odell, Lawrence, L. I.

EMIL BOHATA is managing the store of Mr. Schwenzner, First avenue and 72nd street. He now wears glasses, and looks like the Gute Deutsche Apotheker, that he is.

ONE of our boys who prides himself on his affability and happy faculty of satisfying customers, was flabbergasted the other morning. A lady walked in, and said, "I suppose you can find anything in the Directory, for me, that I want?"

"Certainly," said our amiable friend, walking over twenty-two feet of store to reach the book.

"Well, find out where they keep the relic of St. Ann, and what hour I can see it." Tableau with slow curtain.

I CALLED on Hoburg the other day and found him looking well, despite the high life at the Branch. He whispered something about driving a fast horse, when someone suggested he must have been asleep, and it was a nightmare.

EUGENE F. LOHR.

'94 NOTES.

BUT for the postponement of weekly cycle runs, and the usual exodus to the country, the hot August days have passed into history as quite dull. In fact, so dull that many delinquent subscribers have failed to grasp the "idea" during the month.

LOUIS MARCUS has attained the goal of the aspirations of many. Last month he purchased Murphy's Pharmacy on Third avenue, this city.

DR. J. HENRY WURTHMANN is spending the summer months with Burmeister, 143d street and Willis avenue.

Capt. Erb, of the cyclers, left on the 16th for a two weeks' trip to Niagara and Montreal.

Youngs was recently found in the "wilds of Jersey." He was with Moy, of Plainfield.

Apropos of Jersey, I am reminded that my colleague, Geo. Burger, has forsaken Brooklyn for a position with W. R. Laid, 250 Washington street, Jersey City. We hope his time allowance will be more liberal in the future, as George is an indispensable requisite in Alumni functions.

G. W. Race having finished his stay in Chumar's, is now visiting his friends in Seneca Falls. Upon his return he expects to locate in one of the large downtown stores.

N. S. K.

'95 NOTES.

Geo. J. Dürr has resigned his position with F. B. Bracker, 905 Eighth avenue, and is now with Wm. F. Krembs, 89th street and Madison avenue.

Ernst Meyer is still with Eberth, 79th street and Second avenue. He spent the week, from the 9th to 16th of August, fishing, off the shore of Long Island.

Herrman A. Brandner is now an enthusiastic bicyclist. He helps pedalling a tandem, and wishes to be informed when the N. Y. C. P. cyclers will have their "Century" run, as he expects to give his old colleagues a point or two on fast bicycle riding. He is with Henry Woodward, 124 Main street, Middletown, Conn

Burton L. Bennett has gone into business in Bristol, Conn., under the style of Holley & Bennett. He reports that he is thoroughly satisfied with his purchase.

A. E. Wrensch, of Wrensch Bros., 610 Bloomfield avenue, Montclair, N. J., reports good business. He would like to get one of our class flags (I presume to remind him of his good times), but does not know where to apply for one. If any of the readers can inform him he would feel obliged.

Fleck is now with Nauheim, 59th street and Lexington avenue. He was with Eschman, 51st street and Ninth avenue. He says, however, there is no place like the west side.

Serr is still with Smith, 76th street and Lexington avenue. He has been with him about five years, and says there is no place like it.

Watling is at Schoonmaker's, 42nd street and Park avenue.

"Pop" Carter is relieving Cramer, 73rd street and Park avenue, while his several clerks are taking vacations, He left his position with Hetherington, 42nd street and Vanderbilt avenue, and is now going to "relieve" for a change.

Fred Trau can be seen at Kleinan's, 78th street and Park avenue. He went on his vacation August 16th.

Rudolph Gies, Phar. D., has been entered to ride in the Century run of the *Evening Telegram* cyclers, on Saturday, August 29th.

P. Lavalaye, with Brater, 76th street and Park avenue, spent his vacation very pleasantly at his home in New Haven, Conn.

Captain Ludwig G. B. Erb, of the N. Y. C. P. cyclers, would like to hear from all parties taking an interest in the proposed Century run this fall. His address is No. 539 East 88th street.

Contributions for this column solicited.

B. Dauscha.

'96 NOTES.

Fred M. Egger is with W. H. Pohr, Washington Heights. He would like to see some of the boys, there are so many nice young ladies up in that neighborhood.

Adolph G. Riegel, '96, is managing the store for his father, who is in Europe.

It was with great pleasure that I received news that Hayward, who, at the time the last issue was going to press was down with a serious attack of malaria, has entirely recovered.

Chas. Wetmore Smith is summering at Hunter, Greene county, N. Y. He is with Fromer Bros., at the above town.

Branner tells me that Franz got lost the other day and called on him in Hoboken. He is with Powers, Madison avenue and 129th street.

John G. Block, Jr., dropped his watch the other day. He thought he would repair it himself. It took him ten minutes to take it apart, and about two hours to put it together. The watchmaker took $3.00.

Vincent is with his father in Brooklyn. I met him with Cannon at Coney Island, not long ago, but they were too preoccupied with some lady friends for me to interview them.

Frank still occupies his old position with Klutow, Lexington avenue and 109th street.

ONE more, and then the entire Smith family will have been heard from.

UHE claims Weehawken is a slow place, but at the same time he seems loth to leave it. There must be a nigger (or a lady) in the fence.

REZBA has accepted a position with Weislederer, 11th avenue and 42d street.

THE success of this column depending entirely upon the co-operation of the members of the class, the contributor asks that they drop him a line as to where they are, and concerning anything they think "newsy" enough for the column.

JEANNOT HOSTMANN.

A physician recently appeared at a meeting of his medical association with a pocket full of spoons. He stated that he had accumulated them at the houses of his patients and measured their capacity, which he found different in every case, ranging from two-thirds to three times the standard capacity. One teaspoon held exactly five times as much as another. He had brought them to serve as a warning to his colleagues in ordering their medicines.—*Jour. Amer. Med. Assoc.*

BED-SORES.

Bed-sores may be abated if, as soon as the skin reddens, a solution of nitrate of silver of the strength of twenty grains to the ounce is applied with a brush to the part. This measure fails in paralytics.—*Hare.*

HOW TO TRANSFER NEWSPAPER PICTURES.

The liquid to be used is made by dissolving one and one-half drachms common yellow soap in one pint hot water, adding when nearly cold three and one-fourth fluid ounces spirit of turpentine, and shaking thoroughly together. This fluid is applied liberally to the surface of the printed matter with a soft brush or sponge (being careful not to smear the ink which soon becomes softened), and allowed to soak for a few minutes; then well damp the plain paper on which the transfer is to be made, place it upon the engraving, and subject the whole to moderate pressure for about one minute. On separating them, a reverse transfer will be found on the paper.—*Sci. Am.*

THE recent graduates of the New York College of Pharmacy find little difficulty in obtaining positions. In fact the high standing of this institution makes its diploma a sure open sesame to the confidence of the druggist.—*Merk's Market Report,* June 15, 1896.

ALUMINUM—A WARNING.

Percy A. E. Richards, F. I. C., writes to *The Lancet* as follows:

"I was using an aluminum spatula the other day for transferring small portions of different powders to test-tubes, and having wiped it clean had laid it down. In a few minutes' time I noticed it had become covered with what closely resembled a white growth, and although I removed this it formed once more. When carefully examined, this white deposit was seen to consist of a brush-like mass of filaments radiating in all directions, not unlike hyphæ of a vegetable growth, standing erect on the flat surface of the blade. This continued to grow quite visibly, but at length over-balanced and crumbled to a bulky white powder, which qualitative analysis proved to consist of alumina. A few experiments soon indicated that mercuric iodide had been the initial cause of this, as this substance at once produced a similar result with another piece of aluminum. I next tried various salts of mercury, including the two chlorides, the nitrate, sulphate and oxide, and found that they all had more or less the same effect. Indeed, a minute globule of the metal was sufficient to start the "growth." The reason of this curious action would seem to be that mercury is deposited in the metallic condition on the aluminum forming an amalgam, which at once acts on the moisture present in the air or on the surface of the metal to form alumina and liberate hydrogen. The mercury being again set free by this reaction once more attacks the aluminum, thereby prolonging and increasing the action indefinitely. A small strip of this metal, weighing half a gramme, was left in contact with powdered mercuric chloride for about a couple of minutes, then well washed and dried with a cloth. Action at once proceeded, and after an hour the aluminum was again thoroughly washed, dried and then weighed. The loss in this interval of time amounted to a little over 8 per cent. of the total weight; in fact, the strip had been perforated in several places. The action is so curious as to be well worth repeating by any of those interested."

ETIÉVANT states that candied sugar is used to adulterate codeine or as a substitute for it, the crystals appearing similar at first sight. Fehling's solution and the polarimeter will reveal the fraud, as the codeine deviates to the left, the sugar to the right.—*Répertoire de Pharmcaie.*

REAGENTS AND REACTIONS KNOWN BY THE NAMES OF THEIR AUTHORS.*

BASED ON THE ORIGINAL COLLECTION BY A. SCHNEIDER, REVISED AND ENLARGED BY DR. JULIUS ALTSCHUL.

Eleven years ago A. Schneider published in the *Pharmaceutische Centralhalle* a collection of reagents and reactions known by the names of their authors. This compilation was printed in No. 35 of the year 1885 after it had been published in somewhat abbreviated form in the *Pharmaceutischer Kalender* for 1885, which appeared in 1884. This first attempt at an alphabetical compilation of reagents and reactions commonly and only semi-occasionally known by the names of their authors met an undeniable demand. The number of such reactions and corresponding reagents, especially for qualitative tests, is constantly growing. In the study of chemical literature the reader frequently loses the significance of a reference to such reagents or reactions because he is not familiar with the name of the author, which stands for the chemical synonym, or cannot readily find the necessary literary reference. The following list is to assist the reader in such emergencies. That the original list filled a gap in chemical literature was clearly demonstrated by the fact that the edition of that number of the *Centralhalle*, although larger than usual, was rapidly sold, and also by the numerous reprints. The original list also led to the preparation of new lists, of which might be mentioned the collection of Julien Delaite, Luettich, 1892; that of Alberto Janssen, Florenz, 1894; of Dr. C. Duennenberger, Zuerich, 1894; and of Schneller, Eichstaett, 1894.

In none of these collections is any reference made to the original list of Schneider. From a note in Krauch's *Prüfung der chemischen Reagentien, III. Auflage*, p. 394, in which the work of Dr. Duennenberger and of Ferdinand Jean et G. Mercier, *Repertoire des réactifs spéciaux, généralement désignée sous leurs noms d'auteurs*, Paris, 1896, is mentioned without a reference to the collection of Schneider, it seems apparent that the original has been forgotten. The *Pharmaceutische Centralhalle* has therefore seen fit to publish a revised list based on the original one of 1885, in which the more recent literature is duly considered. The growth of this literature is readily indicated by the fact that the list published in 1885 contained about 200 articles (Dr. Duennenberger's list contains 350), whereas, the present list contains over 600 articles and cross references. The author does not even now claim completeness for his list, but hopes that in its new form it may prove a serviceable adjunct both in study and laboratory practice.

As far as the selection of material is concerned, stress has been laid principally on qualitative reactions. Quantitative tests have been added only in so far as they serve also for qualitative determination. Most of the items belong to the technical, pharmaceutical and physiological branches of chemistry. Of bacteriological reagents only a few of the most important were added.

The author has taken special pains to call attention, by means of cross references, to relations existing between different reactions, and particularly to the numerous modifications of some of the more important reactions. An index is added to facilitate the use of the collection.

Adamkiewicz' reaction for albumen. The acetic acid solution of albumenous substances is colored violet upon the addition of concentrated sulphuric acid, and possesses a greenish fluorescence. The same reaction results if the albumen is treated with a mixture of 1 vol. of concentrated sulphuric acid and 2 vol. of glacial acetic acid. The reaction is facilitated by the application of heat, also, according to *Wurster*, by the addition of a few grains of sodium chloride.

Agostini's reaction for glycose. If to 5 drops of the urine to be examined 5 drops of ½ per cent. gold chloride solution and 3 drops of 20 per cent. potassa solution are added, and the mixture is gently heated, the presence of sugar in the urine will be indicated by the formation of a red color.

Allen's reaction for vegetable fats. Equal volumes of fat and nitric acid, specific gravity 1.4, are shaken for ½ minute and then set aside for 15 minutes. The presence of vegetable fats (cotton seed oil) is indicated by the formation of a coffee-brown color.

Allen's reaction for phenol. With hydrochloric and nitric acids phenol produces a carmine red color.

Almén's reagent for blood. A liquid containing blood, when well shaken with a mixture of

---

*Translated for the *Pharmaceutical Review* from the original in Nos. 28 and 29 of the *Pharmaceutische Centralhalle, 1896.*

equal parts of guaiac tincture and turpentine oil, becomes blue owing to the precipitation of guaiac resin. The color is permanent to heat. See also *Weber* and *Schoenbein*.

Almén's tannin solution serves as a precipitant for albumen. It consists of a solution of 4 grams tannin, 8 ccm, of 25 per cent. acetic acid and 190 ccm. of 40 to 50 per cent. alcohol. It also precipitates nucleoalbumin.

Almén's reagent for glucose is prepared by digesting 2 grams of basic carbonate of bismuth with 100 ccm. potassa solution, specific gravity 1.33, and 4 g. Rochelle salt. Upon cooling the clear solution is decanted from the precipitate. 1 ccm. of the reagent is boiled for several minutes with 10 ccm. of urine. If glucose is present a yellowish brown precipitate results, which becomes darker and finally black.

This reagent is also known as the *Boettger-Almén* reagent. Compare also *Nylander's* solution.

Anderson's reaction for distinguishing between chinoline and pyridine salts. The chloro-platinates of the latter, when boiled with water, are converted into insoluble double salts with the elimination of hydrogen chloride, whereas the former remain in solution.

Arata's test for artificial dyestuffs in wine depends upon the observation that these dyestuffs are abstracted from the wine by means of wool. The fibre is then subjected to special reactions.

Arndt's determination of sugar by means of the ferment saccharometer. See *Einhorn*.

Arnold's reactions for alkaloids.

I. Some alkaloids when heated on the water bath with syrupy phosphoric acid, obtained by dissolving metaphosphoric acid or phosphoric acid anhydride in officinal phosphoric acid (Ph. G. III), produce characteristic color reactions: aconitine—violet; nicotine—yellow; coniine—green.

II. Triturated with concentrated sulphuric acid, many of the alkaloids yield characteristic color reactions upon the addition of concentrated 30 to 40 per cent. alcoholic (in some instances aqueous) potassa solution.

III. *Arnold-Vitali's* reaction. A small quantity of alkaloid is triturated with concentrated sulphuric acid and a grain of sodium nitrite is added; then as in II. strong potassa solution. A number of alkaloids produce characteristic color reactions. Thus, *e. g.* atropine and homatropine produce with sulphuric acid and sodium nitrate an orange yellow color which upon the addition of the potassa becomes reddish violet and fades to rose red.

Arnold's reaction for narceine. Upon heating a substance containing narceine with concentrated sulphuric acid and a trace of phenol a reddish color is produced.

Axenfeld's reagent for albumen is a 0.1 per cent. solution of chloride of gold. The solution to be tested is acidulated with formic acid and heated with a drop of the reagent. If albumen is present, the solution becomes purplish, upon the addition of more gold chloride, blue. The latter color reaction is also produced by glucose, starch, tyrosine, lencine, etc., but purplish color is characteristic for albumen.

Aymonier's reaction for *a*-naphthol. The 15 per cent. alcoholic solution of *a*-naphthol is colored violet upon the addition of cane sugar and mixing with 2 vol. sulphuric acid. Upon the addition of one drop of a mixture of 1 per cent. potassium bichromate, 10 per cent. water and 1 per cent. concentrated nitric acid, the same *a*-naphthol solution yields a black precipitate. *β*-naphthol does not produce either of these reactions.

Bach's reagent for hydrogen peroxide, consists of the following solutions:

a) 0.03 potassium bichromate and 5 drops of aniline in 1 liter of water.

b) 5 per cent. oxalic acid solution.

5 ccm. of the solution to be tested, when shaken with 5 ccm. of solution (a) and 1 drop of solution (b), yields a violet red coloration when hydrogen peroxide is present.

Barbot's reagent for fatty oils is fuming nitric acid. When mixed with this reagent, different oils show different behavior with regard to coloration and solidification. Olive oil, for example, yields a white (not red or brown) mixture which solidifies after 1 to 2 hours.

Barfoed's reagent for glucose is either a solution of 14 grains crystallized copper acetate in 200 ccm. water and 5 ccm. acetic acid, or, according to a more recent formula, of 0.5 copper acetate in 100 ccm. water and 1 ccm. acetic acid. Glucose reduces this solution in the cold, more quickly upon heating. Dextrin, cane sugar and milk sugar do not reduce the solution. It is used for the distinction between glucose and lactose in urine.

Barreswil's reagent for glucose corresponds to Fehling's solution, but contains potassa in place of soda.

Basoletto's reagent. A mixture of equal parts by volume of sesame oil and a 2 per cent. solution of cane sugar in hydrochloric acid, specific gravity 1.124, is colored red in the cold, but more rapidly upon heating. With glucose and lactose the color is produced only when the mixture is boiled with the hydrochloric acid and allowed to cool. Compare Baudouin's test.

Baudouin's test for sesame oil. The reagent consists of 0.1 grain sugar dissolved in 10 ccm. hydrochloric acid, specific gravity 1.18. One volume of this solution is shaken with 2 volumes of the oil to be tested. If sesame oil is present the oil upon separation is cherry red.

According to *Lewin*, the reaction is carried out as follows: 0.5 grains of finely pulverized sugar in a test tube is covered with 2 ccm. of the oil, then 1 ccm. of hydrochloric acid, specific gravity 1.18, is poured carefully down the sides of the tube. If sesame oil is present a rose-red zone is formed within 1 to 5 minutes.

According to *Millian*, Baudouin's test is more delicate when carried out with the well dried free fatty acids, which have been obtained from the oil.

Villavecchia and Fabris (q. v.) replace sugar and hydrochloric acid by furfurol. Compare also Carlinfanti and Gassend.

Baumann's reagent for polyatomic alcohols and diamines is benzoylchloride added to the solution of the alcohol or amine in aqueous soda. Insoluble benzoyl esters are precipitated. Used for the detection of glycerin, carbohydrates and various products of bacterial activity in urine.

Bayer's reaction for indol. A solution of indol yields upon the addition of dilute nitric acid and dilute solution of potassium nitrite solution a red color or precipitate.

Beale's creosote mixture for imbedding microscopic preparations. To a solution of 180 g. methyl alcohol and 11 g. creosote sufficient chalk is added to make a thick paste. While constantly stirring 1920 g. of water are gradually added, then a few fragments of camphor. After standing several weeks the mixture is filtered.

Bechi's test for cottonseed oil. Upon heating with an alcoholic-ethereal silver nitrate solution cottonseed oil (eventually upon addition of colza oil) yields a reddish brown color; olive oil and other oils remain uncolored. The Swiss Society for Analytical Chemists in 1895 suggested the following reagent: to 1 g. silver nitrate, dissolved in 5 ccm. of water, 200 ccm. alcohol, 20 ccm. ether and 1 ccm. nitric acid, specific gravity 1.4, are added. In order to test for cottonseed oil, 10 ccm. of the fat and 3 ccm. of the reagent are mixed and the mixture heated on a boiling water-bath for 10 minutes. If cottonseed oil is present the mixture becomes brown or even black. Compare *Millian's* reaction.

Becker's reaction for picrotoxine. The alkaloid reduces Fehling's solution when gentle heat is applied.

Behren's test for fatty oils. When treated with a mixture of equal parts of sulphuric acid, specific gravity 1.835 to 1.84, and nitric acid, specific gravity 1.3, different oils show different behavior. Sesame oil produces a green color.

Beissenhirtz's reaction for aniline. If to a solution of aniline in concentrated sulphuric acid a grain of potassium bichromate is added, the solution first becomes red, then blue, the color gradually disappearing.

Berthelot's alcohol reaction. If a dilute solution of alcohol is shaken with a few drops of benzoyl chloride and soda solution until the odor of benzoyl chloride disappears, the peculiar odor of ethyl benzoate is formed.

Berzelius' test for albumen. Metaphosphoric acid in freshly prepared concentrated solution precipitates all albuminous substances (except peptone) from their aqueous solutions.

Bettendorf's test for arsenic. A solution of stannous chloride in concentrated hydrochloric acid, specific gravity 1.19, when heated with a solution of arsenic or arsenous acids in strong hydrochloric acid, yields a brownish turbidity or precipitate of metallic arsenic and tin. The presence of much sulphuric acid, of oxydizing or organic substances interfere with the reaction.

Bieber's reagent consists of equal parts of concentrated sulphuric acid, red nitric acid and water.

Biel's cocaine test. If a solution of 0.1 g. cocaine salt in 1 ccm. concentrated sulphuric acid is heated for several minutes on a water-bath, the addition of several cubic centimeters of water causes the formation of a white, crystalline precipitate of benzoic acid.

Biltz's test for mono- and bicarbonate of sodium. When treated with mercuric chloride under certain conditions, these yield a white or respectively a brown precipitate.

Bischoff's reaction for gallic acid. When heated with dilute sulphuric acid and cane sugar gallic acid produces a red coloration. See also *Pettenkofer*, *Strassburg*.

Bischoff's melting point test for butter. See *Drouot's* test.

Boas' reagent is a solution of tropæolin, or paper saturated with such solution.

Bodde's reaction for the distinction between resorcin and phenol, benzoic acid and salicylic acid. A solution of resorcin yields a violet color with sodium hypochlorite, which fades to yellow; with more hypochlorite solution and heat, a yellowish red or brown color is produced. If before the addition of the hypochlorite, ammonia is added, a violet color is first produced, which changes to yellow and upon heating is converted into dark green.

Phenol, salicylic acid and benzoic acid yield a slight color with hypochlorite only upon heating. Upon previous addition of ammonia the acids are not colored.

Boedecker's test for albumen. If to a solution containing albumen (*e. g.* urine), which is acidulated with acetic acid, potassium ferrocyanide is added, a turbidity or flocculent precipitate is produced.

Boettger's (also *Boettcher's*) test for glucose. A dilute solution of glucose (or diabetic urine) is heated with a solution of sodium carbonate and some bismuth subnitrate or bismuth oxyhydrate. If reduction takes place the suspended bismuth compound is blackened. According to *Krueger*, a stable reagent can be prepared by heating 15 g. bismuth nitrate, 15 g. tartaric acid, 75 g. water and the addition of sufficient aqueous potassa to effect solution, and some glycerin.

Boettger's test for the red color of wine consists in the addition of 1 volume of concentrated copper sulphate solution to 3 volumes of wine diluted to ten times its volume. Pure red wine is thereby discolored. Unfermented wine as well as the coloring matter of bilberry, malva, cherries, also fuchsin remain unchanged or are colored violet.

Boettger's reagent for ozone. Filter paper saturated with solution of gold chloride free from acid is colored violet by ozone. A test paper formerly suggested by *Boettger* contained thallium hydroxide, which was colored brown by ozone.

Boettger's test for sugar in glycerin. 5 drops of glycerin are heated to boiling with 100 drops of water, 1 drop of nitric acid, specific gravity 1.3, and 0.03 to 0.04 gram. ammonium molybdate. If sugar is present the solution is colored intensely blue.*

Boettger's reagent for hydrogen peroxide. If to a solution containing hydrogen peroxide a solution of starch cadmium iodide and little ferrous sulphate is added, the blue color of starch iodide is produced. (Also known as *Schoenbein's* reagent.)

(*To be continued.*)

MISCELLANEOUS NOTES.

ESTIMATION OF MORPHINE IN OPIUM.

G. Looff has found that sodium salicylate removes those substances which prevent the precipitation of morphine in opium products, and on this fact bases the following process: 5 grms. of the finely powdered opium are triturated with water, and the mixture is made up to a total weight of 44 grms. in a tared flask, which is then closed and well shaken for 15 minutes. 1 grm. of sodium salicylate is added, the shaking repeated for a few minutes, and the liquid filtered. 25.8 grms. (=3 grms. opium) of the filtrate are well shaken for 10 minutes with 3 grms. of ether and 1 grm. of ammonia solution, and the separated morphine collected on a small filter, washed with water, dried, washed with benzine, again dried and weighed.—*Apoth. Zeit. 1896, 11, 192.*

ODONTODOL FOR TOOTHACHE.

French medical journals state that odontodol is the name given in Italy to a new preparation which is superior to all others known in the treatment of toothache. The formula is as follows:

Cocaine hydrochloride	g. 1
Essence cherry-laurel	g. 1
Tincture arnica	g. 10
Solution amonium acetate	g. 20

If the pain is caused by caries, a piece of cotton saturated with the liquid is put into the cavity of the tooth; if it is caused by inflammation of the pulp, the mouth should be washed out with a solution consisting of 30 grams of odontodol diluted with 50 grams of a tepid decoction of linseed. Finally, if the pain extends to the entire jaw, the painful surface should be thoroughly rubbed with several drops of odontodol, after rinsing the mouth with the solution.

M. P. J.

A NON-POISONOUS MATCH

Has been invented by a distinguished chemist M. Ponleaux, according to the *Medical News*. "Potassium permanganate and amyl acetate are among the inoffensive ingredients. At the Pasteur Lucifer Match manufactory, the combination has been tested with satisfactory results. The matches are easily made, without the slightest danger to the factory hands. They ignite readily, there is no danger of explosion when stored, and the disagreeable odor common to lucifer matches is in these replaced by a positively agreeable one."

---

*This is Mason's test for glucose in glycerin published in 1872.—Ed.

TABLET MAKING AT THE DISPENSING COUNTER.*

BY S. HARDWICK.

I have brought forward this note to show what can be done towards meeting the demand for medicines in the tablet form with a small and inexpensive apparatus sold by Messrs. Maw, Son and Thompson, London, which is doubtless generally well known.

First, as regards drugs given in small doses as to bulk, as the alkaloids, arsenious acid, calomel, grey powder, podophyllin, aloin, sulphide of calcium, etc., these generally only require to be triturated with a convenient quantity of sugar of milk, and may be compressed easily. This class of tablets should be made to weigh 2 grains each, that being a suitable quantity to work in the machine. The sugar of milk used should be in crystals, and the trituration of the drug carried out without great pressure, as a very fine powder does not compress well. Should there be a tendency for the tablet to stick in the die or split, the addition of a trace of heavy paraffin oil sprayed over the powder will generally overcome the difficulty.

Another method is the addition of half a grain of cocoa powder (from which the oil has been expressed) in place of an equal quantity of sugar of milk. This greatly facilitates compression, the trace of oil preventing the tablet sticking in the mould. The formula stands—

Cocoa Powder.................... ½ grain.
Sugar of Milk to.................. 2 grains.
Medicament, as ordered.

No difficulty is experienced in making such a powder into tablets with a blow of the hammer, the dispenser being able to turn them out with ease and certainty in not more than would be required to make the same quantity into pills, or put it up in cachets. I have not met with any objection to the color of the resulting tablet, while the facility of manipulation gained by the use of cocoa is a great advantage, as is also the convenience of having a general excipient applicable to a large class of tablets.

Tinctures of aconite, belladonna, digitalis, strophanthus, nux vomica, etc., may be evaporated on the sugar of milk over a water bath, cocoa powder added, and the resulting powder easily compressed in the usual way.

Tablets of extract of cascara and combinations of cascara and podophyllin are easily made, the dried and powdered extract should be used, half its weight of liquorice powder added, and a trace of heavy paraffin oil sprayed over the powder.

Other tablets requiring special notice are caffeine citrate, and may be compressed without the use of any excipient.

Grey powder, 1 grain, requires 2 grains of sugar of milk, and the addition of a trace of paraffin oil. Quinine, 1 grain, works well with the addition of 1 grain of starch, and a trace of paraffin oil.

Other tablets of this class may generally be made on these lines without difficulty, the great point being to keep the machine perfectly clean, and dust it occasionally with French chalk.

I have had made for me a similar machine of larger diameter, which is useful for making five or ten grain tablets. In it such salts as the bromides of potash, soda and ammonia are easily compressed without the addition of any excipient. Salol, phenacetin, and sulphonal are also easily made into tablets, but require the addition of one grain of starch to each five grains, when the resulting tablet disintegrates beautifully on the addition of water. An effervescing powder, as a mixture of citric acid and bicarbonate of soda, is useless as an addition for producing a disintegrating tablet; at any rate in moderate quantity.

Bismuth carbonate is perhaps the most difficult to compress, but the free addition of starch and the use of paraffin oil will somewhat meet the difficulty. Bismuth carbonate and bi-carbonate of soda compress well if the mixed powders are sprayed over with paraffin.

VINEGAR AS AN ANTIDOTE TO CARBOLIC ACID.

Dr. Carleton in a note published in the *Deutsche Medizinal-Zeitung*, Feb. 17, 1896, advocates the use of common vinegar in carbolic acid poisoning. He states that applied to the skin or mucous membranes, vinegar promptly counteracts the toxic effects of carbolic acid. In internal poisoning he advises that vinegar and water in equal parts be freely imbibed and that following this the stomach be promptly emptied.

PROFESSOR HAJAK, of Vienna, says smokers are less liable to diphtheria and other throat diseases than non-smokers in the ratio of one to twenty-eight. Dr. Schiff states that smoking is forbidden in bacteriological laboratories because it hinders the development of the bacteria.

---

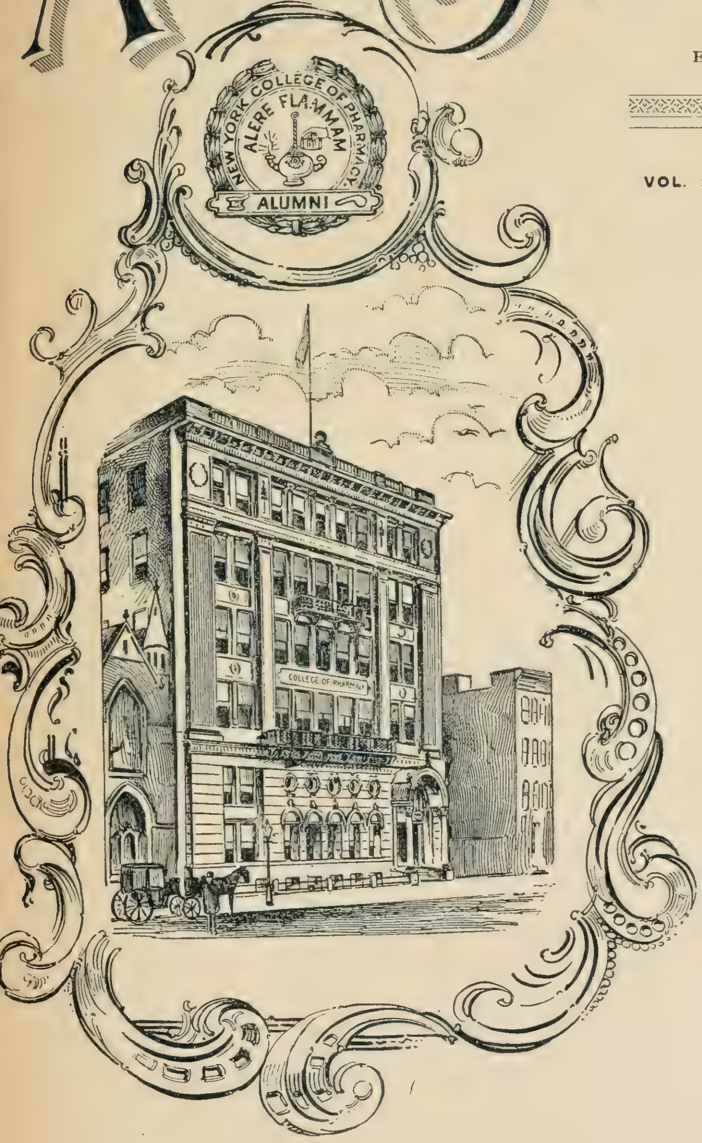
*Read at the meeting of the British Pharmaceutical Conference.

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. No. 10

October, 1896.



Contents:

BOTANICAL GARDENS, - - - 241
By Prof. H. BRITTON, Ph. D.
REVIEWS AND LITERARY NOTES, 245
By Prof. H. H. RUSBY.
SOME RESULTS OBTAINED IN THE DESTRUCTIVE DISTILLATION OF LINSEED OIL, - - 250
By Prof. SAMUEL P. SADTLER.
BACTERIA IN MILK SUGAR, - 250
By Prof. ALBERT R. LEEDS.
NOTES ON A NEW KINO, - 251
SCOPOLAMINE AND ATROSCINE, 251
By O. HESSE.
MISCELLANEOUS NOTES—Abstracts, 253
DISPENSING DEPARTMENT—
C. P. C. N. Y., - - - - - 256
HISTORY AND NAMES OF RHAMNUS (Purshiana Cascara Sagrada,) 257
By Prof. J. U. LLOYD.
LEGAL NOTES, - - - 258
EDITORIAL, - - - - - - - 259
ALUMNI ASSOCIATION, - - 260
COLLEGE NOTES, - - - - 261
C. P. C. N. Y. CYCLERS, - - - 265
CLASS NOTES—Class '93 - - - 233
" " Class '94, '95, '96- - 268

PUBLISHED BY

THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY
. . . . OF THE CITY OF NEW YORK . . .

digestive inertia

Functional Atony, or whatever you may call it, is often at the bottom of a case of Infantile Diarrhoea during the summer months. If the digestive juices do not properly convert the food it ferments in the intestinal tube.

Lactopeptine

by artificially supplying the necessary digestive ferments, prepares the ingested nourishment for absorption, thus aiding in the restoration of normal function.

This is NOT THEORY, but
DEMONSTRATED FACT.

Be sure, however, that it's

Lactopeptine

and not some inert substitute. Send for samples and literature.

The New York Pharmacal Assoc
Yonkers N.Y.

Oldest Stand on Broadway, N.Y.

Trinity Church 1697
MILHAU'S PHARMACY
183 BROADWAY NEW YORK.
ST. PAUL'S CHAPEL 1764
TRADE MARK

THE "ANIMAL EXTRACT CO.'S"

Heart Extract,		for Heart, Dropsy.
Brain	*do*	for Brain, Nerves, etc.
Medulla	*do*	for Epilepsy, Locomotor-Ataxia.
Ovaries	*do*	for Diseases of Women, etc.
Testes	*do*	for Debility, Lost Vitality, etc.
Thyroid	*do*	for Obesity, Goitre, etc.

Only brand always strictly according to ***Dr. Hammond's*** published formulas, or $100 forfeit.

Mailed $1. Circulars Free.

Mention this Journal.

J. MILHAU'S SON, Druggist,

183 Broadway, N. Y.

DR. DÉCLAT'S

ANTISEPTIC METHOD

In Tuberculosis, Malarial Fevers, Diphtheria, Zymotic diseases, Cancers, etc.

HYPODERMIC INJECTIONS, SYRUPS, ETC., OF

Nascent Phenic Acid, antiseptic.
Ammonia Phenate, antipyretic.
Sulpho-Phenique, for chronic cases.
Iodo-Phenique, alterative, resolvent.
Pheno-Fer, assimilable iron tonic.
Phenated Cod Liver Oil, nutrient.
Syr. Amm. Phenate Co., for whoop. cough.
Glyco-Phenique for gargle, spray, wash.

In 1869 and 1870 **Dr. Declat** filed reports, **Paris**, on hypodermic injections of **Phenic Acid with Pilocapine**, etc.

Formulas published.
Medals for superiority of phenic acid.
Medical Reports on mentioning this Journal.

J. MILHAU'S SON, New York.

Agent for the Déclat Manufacturing Co.

THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, October, 1896. No. 10.

LIBRA
NEW YO

BOTANICAL GARDENS--ORIGIN AND DEVELOPMENT.*

BY PROF. N. L. BRITTON.

The cultivation of plants within small areas for their healing qualities by the monks of the middle ages appears to have been the beginning of the modern botanical garden, although these mediæval gardens doubtless took their origin from others of greater antiquity. Botanical gardens were thus primarily formed for purely utilitarian purposes, although the æsthetic study of planting and of flowers must doubtless have appealed to their owners and visitors. Their function as aids in scientific teaching and research, the one which at present furnishes the dominating reason for their existence, did not develop much, if at all, before the 16th century, and prior to the middle of the 17th century a considerable number existed in Europe in which this function was recognized to a greater or less degree, of which those at Bologna, Montpellier, Leyden, Paris and Upsala were, perhaps, the most noteworthy. The ornamental and decorative taste for planting had meanwhile been slowly gaining ground, as well as the desire to cultivate rare or unusual species, and during the 18th century attained a high degree of development. Many persons of wealth and influence fostered this taste and became, through the employment of men skilled in botany and horticulture, generous patrons of science. The world was searched for new and rare plants, which were brought home to Europe for cultivation, and many sumptuous volumes, describing and delineating them, were published, mainly through the same patronage. The older gardens were essentially private institutions, but as the rights of the people became more and more recognized, many existing establishments and an increasing number of newly founded ones became, to a greater or less extent, open to the public, either through an admittance fee or without charge. The four main elements of the modern botanical garden have thus been brought into it successively:

---

* Vice-Presidential address before Section G, American Association for the Advancement of Science, Buffalo, N. Y., August 24, 1896.

1. The utilitarian or economic.
2. The æsthetic.
3. The scientific or biologic.
4. The philanthropic.

These four elements have been given different degrees of prominence, depending mainly upon local conditions, some gardens being essentially æsthetic, some mainly scientific, while in our public parks we find the philanthropic function as the underlying feature, usually accompanied by more or less of the æsthetic and scientific.

The Economic Element.—In the broadest extension of this department of a botanical garden there might be included, to advantage, facilities for the display and investigation of all plants directly or indirectly useful to man, and their products. This conception would include forestry, pharmacognosy, agriculture, pomology, pathology and organic chemistry, and, in case the management regards bacteria as plants, bacteriology.

The display of the plants may be effected by growing such of them as will exist without protection in the locality in a plot, more or less individualized, commonly known as the Economic Garden, while those too tender for cultivation in the open are grown in the greenhouses, either in a separate house or section, or scattered through the several houses or sections, in the temperatures best adapted to their growth. The display of plant products, best accompanied by mounted specimens of the species yielding them, by photographs and by plates, is accomplished by the Economic Museum, where these are arranged in glass or glass-fronted cases, suitably classified and labeled. It is believed that the most useful results are obtained by arranging this museum by the products themselves, and thus not in biologic sequence, but by bringing together all drugs, all fibres, all woods, all resins; where the same product is used in more than one industry the exhibit may be duplicated, more or less modified, without disadvantage.

The investigation of economic plants and their products is accomplished through the Scientific Department, and few valuable results can be reached unless the scientific equipment is well developed. The two departments must work conjointly, both on account of the necessity of knowing just what species is under investigation, its structure, distribution and literature, and in order that the most approved and exact methods may be used in the research. Any idea that the scientific element can be dispensed with in connection with economic studies is palpably untenable.

Teaching and research in agriculture, pomology and plant pathology are so well organized in America, through our National Department of Agriculture and our numerous agricultural colleges and schools, that there is no great necessity for providing elaborate equipments for those branches in botanical gardens. But in case the endowment of a garden were sufficiently large to enable them to be successfully prosecuted, in addition to more necessary work, there can be no doubt that important additions to knowledge would be obtained. On the other hand, no such liberal allowances have been made with us for forestry or pharmacognosy, and research and instruction in these sciences must prove of the greatest benefit to the country.

The Æsthetic Element.—The buildings, roads, paths and planting of a botanical garden should be constructed and arranged with reference to tasteful and decorative landscape effect. The possibilities of treatment will depend largely upon the topographical character of the area selected and the natural vegetation of the tract. The buildings required are: A fire-proof structure or structures for museum, herbarium, libraries, laboratories and offices; a glass house with compartments kept at several different temperatures for exhibition, propagation and experimentation, or several separate glass houses; and to these will usually be added dwelling houses for some of the officers, a stable and other minor buildings. The character, number and sizes of the buildings generally depend on financial considerations. In placing the structures intended for the visiting public, considerations of convenient access, satisfactory water supply and the distribution of crowds must be borne in mind, in connection with the landscape design. The planting should follow, as nearly as possible, a natural treatment, except immediately around the larger buildings and at the entrances, where considerable formality is desirable for architectural reasons. It is especially desirable that as much natural treatment as possible should be given to the areas devoted to systematic planting — herbaceous grounds, frutecetum, arboretum. The rectilinear arrangement of plant beds found in most of the older gardens has become abhorrent to landscape lovers, and the sequence of families desired can usually be quite as well obtained by means of curved-margined groups.

The cultivation of decorative plants, and especially the fostering of a taste for them, and the bringing of unusual or new species to attention and effecting their general introduction, are important functions of a botanical garden. For the accurate determination of these plants, information concerning their habits and structure, and suggestions regarding the conditions of their growth, the æsthetic side must rely on the scientific.

The Scientific or Biologic Element.— The important relations of the scientific department to the economic and æsthetic have already been alluded to. The library, herbarium, museums and laboratories are the sources whence exact information regarding the name, structure, habits, life-processes and products of plants are derived, and they are the more useful as they are the more complete and thoroughly equipped. It is practically impossible for any one library to have all the literature of botany and related sciences; any one herbarium to possess an authentic and complete representation of all species of plants, or any one museum to be thoroughly illustrative; absolute perfection along these lines cannot be obtained, but the more closely it is approximated the better the results. The research work of the scientific department should be organized along all lines of botanical inquiry, including taxonomy, morphology, anatomy, physiology and paleontology, and the laboratories should afford ample opportunities and equipment for their successful prosecution.

The arrangement of the areas devoted to systematic planting, and the proper labeling of the species grown, are important duties of the scientific department. The sequence of classes, orders and families is usually made to follow some "botanical system." It is highly desirable that this should be a system which indicates the natural relations of the families, as understood at the time the garden is laid out, and be elastic enough to admit of subsequent modification, as more exact information relative to those relationships is obtained. The weight of present opinion is overwhelmingly in favor of an arrangement from the more simple to the more complex, and this will apply not only to the systematic plantations, but to the systematic museum and herbarium.

The scientific possibilities of a botanical garden are the greater if an organic or co-operative relationship exists between it and a university, thus affording ready facilities for information on other sciences.

The Philanthropic Element.—A botanical garden operates as a valuable philanthropic agency, both directly and indirectly. Its direct influence lies through its affording an orderly arranged institution for the instruction, information and recreation of the people, and it is more efficient for these purposes than a park, as it is more completely developed and liberally maintained. Its indirect, but equally important, philanthropic operation is through the discovery and dissemination of facts concerning plants and their products, obtained through the studies of the scientific staff and by others using the scientific equipment.

NUMBER AND DISTRIBUTION OF BOTANICAL GARDENS.

There are somewhat over 200 institutions denominated botanical gardens, but only a few of them meet the requirements of the foregoing sketch. Some are essentially pleasure parks, with the plants more or less labeled; most of them pay some attention to taxonomy and morphology; many to economic botany, while a small number are admirably equipped in all branches of the science.

I have drawn freely on Prof. Penhallow's first annual report of the Montreal Botanical Garden, published in 1886, for the following approximate statement of the number in different countries:

Algeria, 1.
Australia, 5.
Austro-Hungary, 13.
Belgium, 5.
Brazil, 2.
Cape of Good Hope, 3.
Ceylon, 1.
Chili, 1.
China, 1.
Cochin China 1.
Canada, 1.
Canary Islands, 1.
Egypt, 1.
France, 22.
Germany, 36.
Great Britain and Ireland, 12.
Greece, 1.
Guatemala, 1.
Guiana, 1.
Holland, 4.
India, 7.
Italy, 23.
Japan, 1.
Java, 1.
Malta, 1.
Mauritius, 1.
Natal, 1.
New Zealand, 1
Denmark, 2.
Ecuador, 1.
Norway, 1.
Peru, 1.
Philippine Islands, 1.
Portugal, 3.
Reunion, 1.
Roumania, 2.
Russia, 16.
Servia, 1.
Siberia, 1.
Spain, 2.
Straits Settlements, 1.
Sweden, 6.
Switzerland, 4
Tasmania, 1.
United States, 10.
West Indies, 6.

NOTES ON THE NEW YORK GARDENS.

The establishment of the New York Botanical Garden was authorized by the Legislature in 1891, and the enabling act was amended in 1894. The enterprise was inaugurated and the legislation procured by a committee of the Torrey Botanical Club, appointed in 1889. The Act of Incorporation provided that when the corporation created should have raised or secured by subscription a sum not less than $250,000.00, the Commissioners of Public Parks were authorized to set apart and appropriate a portion of one of the public parks, not exceeding 250 acres, and the Board of Estimate and Apportionment was authorized to issue bonds, aggregating the sum of $500,000.00, for the construction and equipment, within the grounds, of the necessary buildings. The subscription of $250,000.00 required by the Act of Incorporation was completed in June, 1895, and the Commissioners of Public Parks, in the following month, formally appropriated 250 acres of the northern part of Bronx Park for the purposes of the Garden. Since that time the preparation of plans for the development of the tract has been steadily progressing, including designs for the museum building and a large horticultural house. This planning is still in progress, in charge of a commission of architects, engineers, gardeners and botanists, who will complete their work within a short time, and be ready to submit a complete scheme to the Board of Managers during the coming autumn. Meanwhile, much preliminary work has been accomplished in clearing the ground, in grading, in the planting of borders, in the establishment of an extensive nursery, and in the accumulation of herbarium, museum and library material. Through a co-operative agreement entered into with Columbia University, the herbarium and botanical library of the University will be deposited with the Garden, and most of the research and graduate work of the University in botany will be carried on in the Museum Building.

The endowment fund has been materially increased, and about 430 persons have become annual members of the Garden, contributing ten dollars a year each to its support. The publication of a Bulletin has been commenced by the issue, in April, of the first number of Volume I.

A NEW EXCIPIENT FOR APPLYING DRUGS TO THE SKIN.

Professor Unna (Hamburg) in 1894 brought forward some varnish for the skin, which consisted chiefly of tragacanth. Tragacanth did not suspend heavy particles well unless it was present in a large proportion, and then the varnish did not spread well. He has found a perfect basis formed by the addition of gelatine to the tragacanth; the tragacanth probably surrounded the gelatin, as the mixture could be used with drugs which could not be used with gelatin alone. The gelatin and tragacanth were present to the extent of 2½ per cent. each. Professor Unna suggests that the new basis should be first employed in cases of acute eczema.—*Lancet*, 3806, p. 425.

REVIEWS AND LITERARY NOTES.*

BY PROF. H. H. RUSBY.

An Illustrated Flora of the Northern United States, Canada and the British Possessions From Newfoundland to the Parallel of the Southern Boundary of Virginia, and from the Atlantic Ocean Westward to the 102d Meridian. By Nathaniel Lord Britton, Ph. D., Emeritus Professor of Botany in Columbia University, the Director-in-Chief of the New York Botanical Garden, and Hon. Addison Brown, President of the Torrey Botanical Club. In Three Volumes. Vol. I., Ophioglossaceae to Aizoaceae; Ferns to Carpetweed, Royal 8vo., pp. 611, New York, Charles Scribner's Sons, 1896. Price per volume, $3.00.

An entirely distinct epoch in the study of the North American flora is marked and, as to its general influence, inaugurated by the publication of this great work. Popularization, but with a distinct gain to science; a more intelligent and natural arrangement of groups, the application of broader and more natural principles in the delimitation of species; a full and careful consideration of distribution; a rational and just system of nomenclature—these are some of the progressive steps which are forcibly and clearly brought to mind as we examine the pages of our new flora. In comparing new works with old, we are often led to disparage the former because of the poorer advantages which were possessed by the authors of the latter. It is, however, quite safe to say that in no preceding work of the kind have the materials at hand been more completely utilized, nor has there been a more careful consideration of principles or a more exhaustive study of details. Those American botanists who have prayed for more botany and less nomenclature may now

---

*Reprinted from advance sheet of the *Bulletin of the Torrey Botanical Club.*

give thanks! The first portion of their prayer, at least, is answered. The scope and nature of the work cannot be better stated in brief than by quoting the opening paragraph of the authors' introduction:

"The present work is the first complete Illustrated Flora published in this country. Its aim is to illustrate and describe every species, from the Ferns upwards, recognized as distinct by botanists and growing wild within the area adopted, and to complete the work within such moderate limits of size and cost as shall make it accessible to the public generally, so that it may serve as an independent handbook of our Northern Flora and as a work of general reference, or as an adjunct and supplement to the manuals of systematic botany in current use."

The introduction also informs us that about three-fourths of these species, some four thousand in number, are here figured for the first time.

Not only is the conception of such a work as a practicable possibility to be credited to Judge Brown, the elaboration of the plan and the surmounting of the difficulties which have from time to time arisen have been his great and constant care. Above all, it is through his munificent provision of the substantial means alone that the accomplishment of the undertaking has been rendered possible. Much as we owe to the publishers whose names appear upon the title-page, it must not be unknown to the public that the real publisher is the Hon. Addison Brown, nor that he undertook the publication as a labor of love, with little prospect at the time that it would ever prove other than an expensive contribution to the popularization of science. Nor is it out of place to hazard the opinion, after a study of the work, that the actual result will yet prove for the publisher a surprise upon the sunny side.

The value of illustrations thus presented need hardly be dwelt upon. Important as they are in introducing the general public to a knowledge of our plants, the value of reliable figures is appreciated by none more keenly than by the experienced botanist. Not because they are more important than some other features of the work, but because of their greater prominence, the illustrations are examined first. The adoption of a standard size for the cuts has been the result of much anxious thought. To display undimmed the individuality of the plant was the first consideration, while upon the other hand to destroy the popular character of the work by unduly enhancing the cost was to sacrifice the principal object for which it was undertaken. Apparently the most successful result possible in this direction has been attained. When the entire plant could not be figured, it has been individually studied as to its most charteristic parts. Tall stems have frequently been included by representing them in a doubled or folded position. In all cases of reduction, life-size drawings have been employed. The magnification of such minute parts as sporangia, akenes, seed-coats and appendages is a feature of the very highest importance, and one the educational influence of which can hardly be over-estimated. Good illustrations are the fruits of the Potamogetons and dissections of the column in Orchidaceae. The reduction is conspicuously indicated beside the general illustrations, but it cannot be regarded as otherwise than unfortunate that the degree of magnification of the minuter parts was not also stated (the authors deeming it unnecessary), or, at least, that it was not made clear that the same degree was used in illustrating the same organ throughout a group.

The work upon the illustrations, both drawing and engraving, is of the very highest quality, and a remarkable degree of naturalness has in most cases been attained. In many cases, as, for instance, in that of *Xyris torta*, the figures are exceedingly beautiful. Drawn usually from dried specimens, the figures have afterward been compared as often as possible with the living plants. To have drawn all the figures from life, would, doubtless, have still further improved the appearances, but this was absolutely impossible.

Natural considerations, which have been allowed to control the entire planning of the work, are manifest in the selection of the boundaries selected for the flora. Even the announced limits are over-stepped when necessary to complete a natural region, as in the inclusion of the extra-limital portions of Nebraska. That the relations between geography and botany have been attentively studied is evidenced in more than one way. Both local catalogues and local herbaria have been thoroughly searched to determine the precise range-limits, and great care has been exercised in indicating clearly the habitats of the species. In no preceding work has the subject of range been so well elaborated. We find in this work, moreover, about the first systematic attempt to give the altitudinal distribution. So little attention has been paid by collectors to this important subject that the information here accumulated by Dr. Britton can hardly be regarded as more than a working basis, but as such its value will prove very great. Not the least valuable of the geographical features is the statement, in a general way, of the extra-territorial ranges of the species. Having thus clearly established the ranges of the forms, they have been allowed to exercise a certain weight in deciding in difficult cases of species-limitation. So important has this subject of plant-geography come to be regarded in modern botany that we may indulge a little natural pride in the appearance of so thorough a study of it by American authors.

It is scarcely necessary to review here the slow and laborious process by which systematic botanists since Linnæus have worked toward the natural arrangement and sequences of plant-groups. It is sufficient to say that only by a masterly review of morphology, anatomy, physiology, distribution in time and place, and even of such subjects as chemistry and nutritive and physiological properties, have we been brought to an arrangement which commends itself to all who recognize and value a deciding influence higher than the dictum. Such inconvenience as results from working under the new arrangement may fairly be regarded as due to a failure to have taken natural relations into consideration. To those who have done so, the new arrangement will present no other unfamiliarity than that of a new thing which has been long and eagerly sought. As to beginning at the upper or lower end of the sequence, the reviewer confesses to but faint interest. It would appear to matter but little whether we turn to the right or to the left as we enter the herbarium. But it is of vital importance that those things should be brought together which show the closest relationship, and the acceptance or non-acceptance of any portion of the new arrangement may best be decided upon the basis of those principles upon which it has been founded. The following extract from the table of contents displays the arrangement of the families :*

PTERIDOPHYTA I

1	Ophioglossaceae	1	6	Marsileaceae	33
2	Osmundaceae	4	7	Salviniaceae	34
3	Hymenophyllaceae	6	8	Equisetaceae	35
4	Schizaeaceae	7	9	Lycopodiaceae	39
5	Polypodiaceae	8	10	Selaginellaceae	44
			11	Isoetaceae	45

---

*Underneath this table the author prints another, in which the common or English names of the orders are substituted.

SPERMATOPHYTA 49

Gymnospermae 49

1	Pinaceae	49	2	Texaceae	61

Angiospermae 61

Monocotyledones 62

1	Typhaceae	62	15	Commelinaceae	374
2	Sparganiaceae	63	16	Pontederiaceae	379
3	Naiadaceae	65	17	Juncaceae	381
4	Scheuchzeriaceae	82	18	Melanthaceae	399
5	Alismaceae	84	19	Liliaceae	410
6	Vallisneriaceae	92	20	Convallariaceae	427
7	Gramineae	94	21	Smilaceae	438
8	Cyperaceae	234	22	Haemodoraceae	442
9	Araceae	360	23	Amaryllidaceae	443
10	Lemnaceae	365	24	Dioscoreaceae	446
11	Mayacaceae	367	25	Iridaceae	447
12	Xyridaceae	368	26	Marantaceae	454
13	Eriocaulaceae	371	27	Burmanniaceae	455
14	Bromeliaceae	374	28	Orchidaceae	456

Dicotyledones 482

Choripetalae 482

1	Saururaceae	482	10	Urticaceae	530
2	Juglandaceae	483	11	Loranthaceae	534
3	Myricaceae	487	12	Santalaceae	536
4	Leitneriaceae	489	13	Aristolochiaceae	537
5	Salicaceae	490	14	Polygonaceae	541
6	Betulaceae	506	15	Chenopodiaceae	569
7	Fagaceae	513	16	Amaranthaceae	586
8	Ulmaceae	523	17	Phytolaccaceae	593
9	Moraceae	527	18	Nyctaginaceae	594
			19	Aizoaceae	597

It is incidentally to be regarded as fortunate that this arrangement brings before our students in the first volume those families which are usually regarded as most difficult. By the aid of this volume, any field-student or collector can, during the coming months, and before the appearance of the remaining volumes, become fairly well-acquainted with the representatives of these difficult groups which are afforded by his locality.

The work will doubtless be assailed by a certain class because of the narrowness with which the species-limits have been drawn. On this subject it may be well to quote the authors, "The present tendency of expert opinion is to separate more freely into convenient natural groups, as genera and families, according to similarity and structure, habit, form or appearance." (Introduction, p. v). To this may be added the statement that the tendency to unite species is manifested rather by those who act as editors, that to separate them, by those who pursue special studies. In the performance of this portion of the work, Dr. Britton has been exceptionally well-situated. During the six years that this work has been under way he has been surrounded by a large and energetic group of workers, trained and held together largely through the influence of The Torrey Botanical Club. These men and women have gladly undertaken from time to time the investigation of difficult or of poorly-known groups, and they have almost without exception brought to bear upon their work every modern method of research. This period has been noted further for great activity in similar work throughout the country. An unusual amount of material in the way of field-notes has also been recently accumulated, a large part of it directly in the interest of this work. All this material has been assiduously studied. Although some of the cases of species-division appear surprising, yet in view of the minuteness with which the authors have conducted their studies, it may well be that such criticisms as shall be made will possess the demerit of being based upon a lower degree of scrutiny than the determinations themselves.

That the possibility of determining a plant by merely turning to a figure may induce habits of superficiality, is perhaps, true, though hardly so in case of such a work as this. Even in case of those fragmentary illustrated works which may be regarded solely or chiefly in the light of picture-books, it is doubtful if the habits of observation and comparison induced and developed are not of more importance than the habits of superficiality ; but in the present case every influence tends to lead the student on to deeper examination and more scientific methods. Reference has already been made to the illustration of the minuter structures beside the general illustrations. Even more important are the keys to the groups, so freely furnished as to form a complete system. No one, having learned to use botanical language, would of course think of consulting the cuts until the possibilities of the text—that of the keys, at least —had been exhausted. Those others, who may at first resort to the pictures, will, doubtless, quickly learn that time is usually saved by a different course, and a study of botanical terminology introductory to the use of the keys will almost surely follow. If there be some to whom this statement does not apply, the defect may be regarded as natural, and displayed in spite, rather than because, of the character of the book.

Keys, if not usually artificial, are pretty likely to accomplish their purpose the better in proportion as they are so. There is, however, in the keys of this flora an evident design of combining the advantages of a scientific relation and an artificial characterization, an attempt in which there is no end of room for the exercise of ingenuity. The result is that in most of them we note a combination of obvious "ear-marks" with more complex character.

It is needless to say that the rules of nomenclature followed are those which have been officially adopted by American botanists and which are evidently in the near future to dominate botanical writings abroad as well as in America. The code is printed and briefly explained in the introduction. In a foot-note reference is made to the principal American contributions to the subject of nomenclature. The authors would here have done well to include one by the writer, who has labored diligently in the interest of this movement, especially in medical and pharmaceutical circles. It appeared in the *Bulletin of Pharmacy*, and set forth clearly and fully the history of the movement in this country. The importance of applying some system in the application of family names is urged, but its introduction, in advance of full discussion and official adoption, is wisely omitted.

The forms of type, use of capitals and symbols and rules of pronunciation are also here briefly explained.

Throughout the book the accent is indicated in botanical names, specific as well as others.

Much care has been devoted to the selections of the common names, which have also been printed in a separate index. It is hardly to be hoped that a high degree of satisfaction will be given in this direction. Those whose botanical work brings them into especial communication with those who speak of plants by their common names learn to be quite hopeless about satisfying local ideas (and this the authors have not attempted), except by devoting to synonyms an amount of space quite out of the question in such a work. The propriety of excluding a common name of general acceptance because it is misleading as to relationship, as, for example, "Dog's-tooth Violet," may well be questioned. Common names are common property, and where the advisability of having them disturbed on scientific grounds has been officially considered, as, for example, by the National Bureau on Geographical Names, it has been decided indefensible, and on the other hand, when this is done by such a work as the Illustrated Flora, it serves the very useful purpose of reminding those who use those names that they are opposed to scientific authority, sufficient in many cases to lead to their disuse.

In the index to the botanical names the admirable system is followed of indexing the species as well as the genera and families.

The closing thought, that the two remaining volumes require only printing and binding, is by no means the least pleasing with which we regard the present occasion.

SOME RESULTS OBTAINED IN THE DESTRUCTIVE DISTILLATION OF LINSEED OIL.*

WITH REMARKS ON ITS BEARING ON ENGLER'S THEORY OF THE ORIGIN OF PETROLEUM.

BY PROF. SAMUEL P. SADTLER.

It is well known that, in boiling linseed oil for varnish-making and similar purposes, inflammable vapors are given off, the boiling being continued often until they burn freely. Very little has been noted with regard to the character of these vapors, and I know of no special study of them. During the past winter, in connection with the examination of some boiled oil driers for the Atlantic Drier Company, of Philadelphia, I was surprised to find some 40 per cent. of neutral petroleum-like oils in the product. The natural explanation of adulteration with mineral oils being out of the question in this case, I was led to ask as to the process used for the preparation of the boiled oil. I found that it was boiled under pressure, and that considerable quantities of a liquid distillate were being condensed in the dome of the large still and returned to the material in the still. I had the process carried out for me specially and so arranged that I could collect the product of this destructive distillation of the linseed oil, for so it proved to be.

At first the odor of acrolein was very pronounced and powerful, showing that the glycerin of the glycerides composing the oil was being decomposed; later the odor was more that of a cracked petroleum oil, showing that the linoleic and other acids of the oil were undergoing decomposition. I submit a sample of the linseed oil used. It was a clear "old process" oil, of specific gravity 0.929, and showing a saponification equivalent of 183, which is normal for linseed oil. The raw distillate collected after this acrolein odor had nearly disappeared I also show. It had a specific gravity of 0.860 and a saponification equivalent of 1.09, showing that it had been nearly all converted into a neutral hydrocarbon oil.

This was then redistilled from a small iron retort and two fractions collected, leaving a residue in the retort which had the appearance of petroleum residuum or reduced oil, such as is used in the manufacture of vaseline and similar products. The two fractions were then treated with sulphuric acid, as is done in purifying petroleum distillate, and the results are shown in the samples submitted. They resemble quite strongly what is called paraffin oils, showing the characteristic fluorescence of these latter.

From a portion of one of these fractions, on chilling in a freezing mixture, scale paraffin was also separated, a sample of which I submit.

These results, while they can only be considered as preliminary, are sufficient to show that we have hydrocarbon oils analogous to the natural petroleum or mineral oils formed in the distillation of linseed oil under pressure. I have not yet extended this line of experiment to the other seed oils, such as cotton-seed and rape-seed oils, but believe it to be very probable that similar results could be obtained from them. I expect to do this, as well as study more fully the products already obtained. I may be allowed to call attention to what seems to me to be the importance of these results in their bearing on some well-known work of Prof. Carl Engler, of Carlsruhe, Germany. In 1888 and 1889 Prof. Engler published in the *Berichte der deut. chem. Gesellschaft* (21, p. 1816 and 22, p. 592), the results of experiment on the distillation of menhaden oil under pressure. He began at a pressure of 10 atmospheres and ended at 4 atmospheres. A distillate came over at 325° to 400° C., and was approximately 60 per cent. of the oil taken.

The new distillate was of brownish color, transparent in thin layers, and of a strong green fluorescence. Its odor was not unpleasant, and contained no recognizable amount of acrolein. The specific gravity of this distillate was 0.8105.

BACTERIA IN MILK SUGAR.

BY PROF. ALBERT R. LEEDS.

Certain phases of bacteriological investigations command universal and profound popular interest, and any publication relating to the connection of a specific organism with a zymotic disease elicits general attention and discussion. This intimate connection of bacteriology with questions of life and death has led many to regard the study as the proper province of medical specialists, despite the first uses made of bacteriological methods by Pasteur and his followers, and to neglect them as instruments of chemical research. But the morphology, the classification, the physiology, and the botany of the bacteria are in such a rudimentary and unsatisfactory condition that the most valuable methods of bacteriological investigation are still of a chemical nature. The preparation of the culture fluids, the application of the tests, and the isolation of the products are chemical operations, and the advances to be made in the near future are to be looked for mainly on the chemical side of the subject. For this reason the absence from the columns of this journal of papers resting upon the bacteriological questions, has been a matter of surprise to the writer, and the important contributions which have been herein recently made by Dr. Schweinitz, Dorsett, Bennett, Pammel and Mason, a source of congratulation. Their results foretell the rich harvest of the future when the complete quantitative value of the chemical actions involved are known, and the different views which they may be expected to inaugurate as to the nature of many bodies now grouped closely together, but which deport themselves very differently when bacteria are the reagents made use of.

---

*Read at the Montreal meeting of the A. Ph. A.

It is for these reasons that the writer desires to put on record the slight observations which he has made during the course of ordinary chemical work. They spring out of some anomalous behavior of specimens of milk sugar which were being examined for purity. All the samples of pulverized milk sugar coming from drug stores which he examined, proved to contain a ferment when their solutions were kept at the optimum temperature for a sufficient length of time. The lactic acid produced was isolated in the form of calcium lactate. This was not the case with some lactose crystallized in nodular masses of prismatic crystals which has been obtained originally from Kahlbaum, and had been standing for twenty-five years in a stoppered jar. It was sterile. With the exception of this specimen, all the others gave an abundant crop of bacteria when definite weights dissolved in sterilized water were submitted to ordinary gelatin-peptone culture. The maximum number obtained in this medium was 1,400 colonies per gram. of milk sugar. In studying these colonies I looked more particularly for the bacillus acidi lactici and the other ten or twelve species, which are at the present time classified as the specific milk bacteria, but without success. With a lactose-litmus gelatin solution a still larger number of colonies was obtained, and possibly larger search in this medium might have revealed the specific milk bacteria of lactic acid fermentation. But my immediate object had been attained, and the presence of bacteria as a common impurity in lactose, to be looked for and avoided by the chemist and the druggist, sufficiently demonstrated.—*Am. Chem. Soc.*

NOTES ON A NEW KINO.

Although kino was introduced into European medical practice nearly 150 years ago and has gradually been incorporated into ten Pharmacopœias, including our own, the French Codex, and the Pharmacopœia of the United States, there is still some uncertainty about the origin of at least a portion of the supplies from which the wants of pharmacy are filled, while recent research into the astringent properties of the commercial drug reveals a most unsatisfactory divergence of tannin value and solubility in the examined samples, although the specimens were all obtained from the chief source of the market supply in Europe. The tannin value of six specimens examined in this way ranged from 14.2 per cent. to 52 per cent., the least satisfactory of the samples yielding 7 per cent. of a grey-colored ash, while the best only gave 1.75 per cent. of white ash. The test for solubility in rectified spirit, as laid down in the British Pharmacopœia, was answered only by one specimen out of the six, and this, by the way, was the one containing the highest percentage of tannin. It is further noteworthy that this specimen was not derived from *Pterocarpus marsupium Roxb.*, the East Indian kino-yielding tree, which is the only one mentioned in the British Pharmacopœia as the source of the drug, but from *Pterocarpus erinaceus Lam.*, and was, in fact, imported from tropical Africa, the habitat of that tree.

Although kino is not a very important drug, it is nevertheless prescribed sufficiently often to render uniformity in quality a most desirable property of the supply, and in this respect the East Indian kinos, upon which pharmacy has been solely dependent for many years, fall lamentably short. It is difficult to understand the cause of this fact, for *Pterocarpus marsupium Roxb.* is by no means a rare tree. The entire therapeutical requirements of kino do not exceed three or four tons a year, and the preparation of the drug (consisting simply in making longitudinal incisions in the bark round the trunk of the tree, allowing the gum to exude into a receiver formed of a broad leaf and drying it in the sun) is so simple that sufficient supply of kino of fairly constant therapeutical properties ought to be a matter of course. Without going further into this question, it may be sufficient to state here that during the past five or six years the supply of pharmaceutically satisfactory kino has been altogether insufficient to fill the requirements, and that the price of the drug is now about thirty-five times higher than it used to be. It is said that kino is now largely used in "doctoring" port wine; but whether that be true or not, medical men who are in the habit of prescribing kino (the only official preparations into which the drug enters are pulvis catechu compositus, pulvis kino compositus, and tinctura kino) would feel thankful that there is again a prospect of a regular and satisfactory supply of the article, to the employment of which there is only one obstacle—viz., that the supply, though of excellent quality, is not at present official.

It is a singular circumstance that, in returning to the new, or rather the revived African kino, of which three or four consignments have been received in London within the past half year, we should only be going back to the original kino of European therapy, the gummi rubrum astringens Gambiense of Dr. Fothergill. For although the new supplies of African kino come from British Central Africa, and are collected on the borders of the Zambesi and some of its tributaries, it is certain that in them we have to deal with the same drug which was introduced into European materia medica by Dr. Fothergill in 1757,* and which for some unknown reason was superseded shortly afterwards by the produce of *Pterocarpus marsupium Roxb.*, the beula—or bia—tree of the Malabar coast, and to a less degree by that of *Butea frondosa*, the dhak—or pulas—tree of Northwestern India. This first kino of European materia medica, therefore, received from its sponsor the name of gummi rubrum astringens Gambiense. There appears to be no evidence that Dr. Fothergill was aware that the same drug had been described by one Francis Moore, a factor in the service of the Royal African Company, a quarter of a century earlier.† Moore relates that the natives of the Gambia district knew the tree yielding the drug as "kano," but he himself confounded it with dragon's blood, a mistake which was also made by Mungo Park (who likewise referred to the tree), in spite of the fact that the celebrated traveller was himself a medical man. The mistake is easily accounted for by the circumstance that the Portuguese traders in the Mandingo country knew the "kano tree" as Pao de sangre, or blood tree. The derivation of our word kino, however, is not so easily accounted for. It is true that it is closely akin to kano, but, as mentioned above, the "kano" gum was introduced by Dr. Fothergill under a Latin name, and it appears to have been supplanted not long after its introduction by the two East Indian varieties of kino. It is generally held that our name for the drug is derived from the word *kuenee* or *kini* (Sanscrit, *kin-suka*), which is given by the natives of India to the exudation from the bark of *Butea frondosa*.‡ It is certainly a singular coincidence that the natives of Western Africa and those of Northwest India should have used almost identical words in describing closely allied therapeutical agents employed by them for the same purpose.

As early as 1774 kino appeared in the Edinburgh Pharmacopœia as "gummi kino"; Lewis's "Materia Medica" of 1784 and the London Pharmacopœia of 1787 knew it as "resina kino"; but Dr. Fothergill's rather clumsy denomination, "gummi rubrum astringent Gambiense," appears to have lingered among our druggists until well into the present century.

Besides the African and Indian kinos there have at various times been imported into Europe substances closely resembling these in appearance, and to some extent in astringent properties. The most note-worthy of these substances are Jamaican, or West Indian kino, a dried aqueous extract, not an inspissated juice, from *Coccoloba uvifera* Jacq. and Australian or Botany Bay kino, from various varieties of eucalypts (natural order Myrtaceæ). The former is mentioned by Duncan in the Edinburgh Dispenaary (1803) as scarcely distinguishable from African kino, and in the 1811 edition of the same work Duncan states that the African variety has been quite superseded by the product from Jamacia, of Botany Bay, and of the Malabar coast. Amboyna-kino, which is also mentioned occasionally in text-books, was probably obtained from *Pterocarpus indicus* (sono or bingoa-wood), a native of the Malaysian Archipelago.

Among these rival products the Malabar kino speedily gained the upper hand, and gradually obtained official recognition in many pharmacopoeias, although the kino from Butea frondoso is official in the Pharmacopœia of India as buteæ gummi *vel* kino Bengalensis. The African kino, which has now once more made its appearance in commerce, is gathered under the supervision of a trained European botanist and is imported into this country by an African trading company located in Scotland. The manner in which it is obtained gives some guarantee that it will be of a constant quality and free from accidental impurities. Leaves and branches from the parent tree which have been shipped to Europe with consignments of the gum show the kino to be derived from *Pterocarpus erinaceus*, Lam., a tree of which the existence in British East Central Africa was not hitherto known, but which Sir William Hooper identified early in the century as the parent plant of Mungo Park's "kano."

---

* Med. Obs. and Eng. I., 358.

† Travels into the inland parts of Africa. London, 1737

‡ Proceedings of the Royal Asiatic Society, May 24th, 1838.

The African kino occurs in garnet-coloured angular fragments rather larger and less dark in colour than those from *Pterocarpus marsupium*. The drug dissolves in cold water to the extent of about 75 per cent., yielding a pale red solution. It is almost completely soluble in rectified spirit of wine, and was found to possess a tannin value of 52 per cent. when tested by Löwenthal's method. In all these respects it agrees with genuine Malabar kino, now almost unobtainable.

Should it prove possible to secure an adequate supply of it, the African kino, or "kano," as its commercial introducers propose again to call it, may prove a boon both from a therapeutic and a commercial point of view. Lancet 3806, p. 400.

SCOPOLAMINE AND ATROSCINE.

By O. HESSE.

(*Abstract.*)

The alkaloid extracted from the root of *Scopolia atropoides* together with hyoscyamine has been termed scopolamine, although it was subsequently shown to be identical with hyoscine. The two names are, however, used to denote the origin of the alkaloid, the former being employed when it is obtained from the root of scopola, whilst it is termed hyoscine when prepared from hyoscyamus. Scopolamine is said to have more active physiological properties than hyoscine, and investigation has shown that commercial scopolamine hydrobromide contains together with hyoscine hydrobromide, the hydrobromide of a new alkaloid which the author terms atroscine, and identified by its lower rotatory coefficient. The alkaloid, which has the composition $C_{17}H_{21}NO_4$, gives a crystalline hydrate containing $2H_2O$, melting at 37°C. By the action of potash the alkaloid is decomposed into oscine and atropic acid. The substance is a strong base and gives characteristic salts, the solutions of which do not rotate polarized light. Attempts to convert hyoscine into atroscine were not successful. With regard to the determination of atroscine in hyoscine or scopolamine hydrobromide which depends upon the rotation of the plane of polarization, the following details are given:

Hyoscine hydrobromide, crystallizing with $3H_2O$, gives, in an aqueous solution at $t=15°$ and $p=4$, $[a]_D=-22°.5$. In 25 c. c. of solution this concentration is obtained by dissolving 1 grm. of the crystallized, or 0 877 grm. of the anhydrous salt. Under these conditions, if the rotation be a and the scopolamine only contains hyoscine and atroscine, then the percentage of true hyoscine hydrobromide in hyoscine or scopolamine hydrobromide is $\frac{100a}{22.5}$ or $\frac{100a}{25.7}$ if the anhydrous salt be used,

Since a determination of the water of crystallization must always precede that of a, it is preferable to employ the anhydrous salt. Based on this method the author gives some numbers which he has obtained:

	I.	II	III.	IV.	V.
	°	°	°	°	°
$[a]_D$ ------ ----------	−22.1	−12.7	−12.1	−10.0	−11.3
Hyoscine hydrobromide	85.0	49.4	47.1	38.5	43.9
Atroscine hydrobromide	15.0	50.6	52.9	61.5	56.1

The values can be easily converted into those for the crystallized salt, since both atroscine and hyoscine hydrobromide contain $3H_2O$. With regard to its physiological properties, atroscine appears to act similarly to atropine and scopolamine so far as its action on the pupil is concerned, but is from two to four times more powerful in affecting the accommodation. In cases of iritis, too, the new alkaloid acts more powerfully. For the oculist, therefore, it is of importance to have a hyoscine hydrobromide with a low rotation, and the author, in conclusion, points out that the term scopolamine is superfluous, and should be no longer used.—*Ber*, *29*.

Miscellaneous Notes.

THE COMPOSITION OF HUMAN FAT.

C. A. Mitchell reports in the *Analyst* the results of an analysis of human fat, according to which it consists of about 70 per cent. of liquid acids, principally oleic acid, 30 per cent. of solid acids, probably palmitic, with small amounts of stearic and myristic acids, and traces of lower volatile acids.

FORMALIN AS A DISINFECTANT.

Two methods are employed for the destruction of bacteria in rooms: 1. The spray method

Walls, furniture, etc., are thoroughly sprayed with a 2 per cent. formaldehyde solution and the room closed for twenty-four hours; 60 to 70 c.c. of the solution suffices for each square meter of surface. 2. Evaporation of solutions. Clothes are saturated with one pint of formalin solution in which half a pound of calcium-chloride is dissolved. The clothes are then hung in the room which is closed for twenty-four hours. For furs and books especially this method of disinfection with formalin proves specially useful. For dwelling-houses generally the spray method is exceedingly cheap. While working with it the eyes should be protected with spectacles and the mouth and nose with cotton-wool masks; the hands may be covered with vaseline, or gloves.

PREPARATION OF FORMALDEHYDE GELATIN.

The difficulty which has been experienced in completely drying and powdering formaldehyde gelatin has been overcome by Van Vloten (Chem. Zeit.) by beating the gelatin solution into a froth and allowing it to cool completely and harden in this form. He recommends the following process: Dissolve a sufficient quantity of first quality gelatin in about four times its own weight of water; pour this solution into a previously warmed mortar; add the requisite quantity of 40 per cent. formaldehyde solution and mix thoroughly. In consequence of the thin consistence of the gelatin solution the reaction proceeds slowly, so that one has sufficient time to beat the solution into a froth by means of an egg beater. On allowing to stand a short time a small quantity of liquid settles to the bottom, and before congealing the foam may be put into any desired receptable. If the gelatin solution be too dilute, a liquid separates out on standing a short time. The formaldehyde gelatin foam resembles very much the dried, beaten white of eggs and may be easily reduced to powder.—*American Druggist.*

STERILIZATION OF CATGUT.

Boil in a mixture of eighty five parts of ethyl alcohol, five parts of phenic acid and ten parts of water. Five minutes' boiling suffices for the sterilization with a temperature reaching 78° C. Without the water the process is not so complete nor so rapid.—*Saul.*

DISINFECTION IN FRANCE AND GERMANY.

The official method for disinfection in France is to moisten walls, floors, and whatever cannot be removed from the room and taken to the disinfectant station by means of a spray of a 1 in 1,000 solution of the perchloride of mercury. The spray is produced by a portable force-pump fitted with a long nozzle and the apparatus is called a "pulverisateur." The operation of disinfecting a room only occupies one hour. The German official method is to rub down the wall with bread; ordinary German loaves forty-eight hours old are employed, cut into pieces six inches square, with the crust at the back to afford a firm hold. The crumbs having been swept up and burnt, the walls and ceilings are thoroughly sprinkled with weak carbolic solution and the floors and furniture are washed in this solution.

AN INFECTING DISINFECTOR.

A child suffering from a mild attack of scarlet fever was kept indoors for forty days. The apartments were then disinfected under the auspices of the municipal authorities. Two days afterwards a spot was observed on one of the child's tonsils, and on investigation it was found to present a diphtheritic character. The medical attendant was convinced that the disinfectors conveyed the new disease for no other strangers had been near the place and he himself had not visited the house for three weeks.

Quis custodiet ipsos custodes? The foregoing case was communicated on June 18th last to the Société de Médecine Practique in Paris by Dr. Roulin, the medical attendant, who further gave it as his firm opinion that disinfection by pulverisation, which is the method adopted in the City of Paris, gives illusory results. Apparently the infection must have been introduced in the manner indicated, but it is not always safe to depend on *primă facie* evidence.

CHINOSOL

Is the name given to an antiseptic substance, with the *advertised* formula $C_6H_9.N.KSO_4$, said to possess a germicidal action forty times stronger than carbolic acid, and ten times stronger than corrosive sublimate; to be absolutely non-poisonous, non-corrosive, etc.; readily soluble in any proportion of cold water, and the solution does not coagulate albumen.

ACTOL AND ITROL.

Actol, is the name given by Dr. B. Credé to a substance originally formed by the exudation from wounds coming in contact with pure silver foil, such exudation producing lactic acid, therefore lactate of silver is the salt implied when actol is prescribed. Actol is a white powder, odorless and almost tasteless, it is soluble in water and albumenous fluids 1:15, it has no irritating effect. It has four times the antiseptic strength of corrosive sublimate. An aqueous solution 1;1,000 destroys *streptococcus. Staphylococus*, etc., in five minutes, and a solution 1:80,000 stops the development of fungus in blood serum, does not destroy animal tissues, and it prevents the development of fungus in them, being non-poisonous it may be used subcutaneously. In the endeavor to find a silver salt which would be less expensive than actol, eight other organic silver salts were experimented with, when it was found that citrate of silver was the only one which answers the purpose and to this substance the author gives the name itrol. A solution of itrol 1:4,000 destroys all fungus, although twice the price of iodoform it is much more economical in use.

ACETANILIL IN SURGERY.

Jas. J. Walsh, A. M., M. D., states in a "Note on the inhibitory action of acetanilid on bacterial growth" (*Med. News*, 1231, p. 174): "As a germicide in ordinary cultures of pathogenic or non-pathogenic microörganisms, acetanilid seems to be absolutely without effect, and that it is inefficacious for the ordinary purposes of a dusting powder. In some way, however, where it is present, it has a very valuable *inhibitory* action on the *growth* of all ordinary micro-organisms." Dr. Morton (Philadelphia Polyclinic) says he has "employed acetanilid locally in a large number of surgical affections, with results so surprising in some respects as to make it difficult to restrain enthusiasm in commenting upon the antiseptic properties of the drug."

DIAPHTHERINE AND QUINOSOL.

Diaphtherine is a compound of one molecule of ortho-phenolsulphonic acid and two molecules of orthohydroxyquinoline. It is a yellowish crystalline body, readily soluble in water and melting at 82°. Its aqueous solution gives a blue coloration with ferric chloride. According to Vulpius, quinosol is potassium oxyquinoline sulphate. The two bodies are easily distinguished by heating on platinum foil; the former burns completely, the latter leaves a residue containing potassium. An aqueous solution of quinosol is colored green by ferric chloride, and gives precipitates with $HgCl_2$ and lime water. The value of a sample may be estimated as follows: 1 grm. is placed in a graduated tube and water added to 10 c. c ; 1 grm. of sodium acetate in 15 c. c. of water is now added, and the mixture shaken out with 15 c. c. of ether; the volume of the ethereal layer is now increased to 20 c. c. and one-half of it removed and evaporated; the residue should consist of oxyquinoline, melting at 70°, and should weigh not less than 0.25 grm., corresponding to about one-half the oxyquinoline in the sample taken.

CYANOGEN FROM AMMONIA.

E. Bergman states that Bueb found that only a small quantity of hydrocyanic acid was produced by the action of ammonia upon charcoal at 800° C., about 4 per cent. of the nitrogen of the ammonia being converted into cyanogen At 1,000° C. he found that 24 per cent. of the nitrogen became combined as cyanogen. On passing a mixture of ammonia and coal gas over charcoal heated to between 1,150°-1,180°, 60 per cent. of the nitrogen was recovered as cyanogen, 20 per cent. remained as undecomposed ammonia, and 20 per cent. was liberated as free nitrogen. The author has continued Bueb's investigations, and has examined into: (1) The influence of coal-gas upon ammonia in the presence of red-hot charcoal; (2) the influence of carbonic oxide, producer gas, etc.; (3) the influence of temperature upon the yield of cyanogen.

(1) Five experiments were made by passing coal-gas and ammonia over heated charcoal. Hydrocyanic acid, and not ammonium cyanide, was produced.

(2) When the coal-gas was carburretted with pentane, and cyanogen formation increased as the amount of pentane decreased. The author explains this by ascribing it to the dilution of the ammonia by the products of decomposition of the pentane.

(3) When carbonic oxide, producer gas, and mixtures of hydrogen and nitrogen were used instead of coal-gas, the formation of cyanogen proceeded in the same way as with coal-gas, except that more of the ammonia was decomposed.

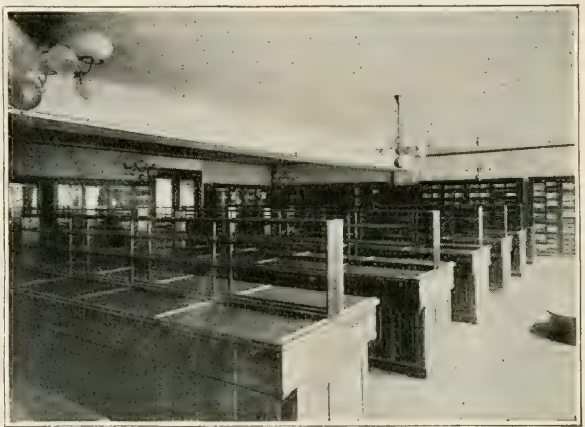
Experiments with ammonia and carbonic oxide without charcoal gave only minute quantities of cyanogen. The most favorable temperature for the formation of cyanogen was found to lie between 1,000° and 1,100°.—*Abstract Jour. Soc. Chem. Ind.*

Dispensing Department.

WITH the coming session the Trustees of the C. P. C. N. Y. inaugurate a material change in pharmaceutical teaching, which will prove of inestimable value to the students.

The prospectus of the College calls the attention of those interested, to the new dispensing department; giving in a general way, an outline of the subjects to be taught therein, and the advantages to be derived therefrom. The department will be under the general supervision of Prof. Geo. C. Diekman assisted by Wm. A. Hoburg, Jr., Ph. G.

A more detailed description of the department, than that published in the annual announcement, and a more concise statement regarding its aims and purposes may prove interesting to the readers of the ALUMNI JOURNAL.



The department is located on the first floor of the College building, and occupies in its entirety the commodious room situated immediately behind the library and offices.

The dimensions of the room occupied by the department, (see illustration from a photograph by Mr. O. J. Griffin,) are 52x38 feet, allowing ample room for the necessary desks and fixtures.

There are fourteen main sections, seven on each side of the room, with ample space for passage ways between and around them. Each main section is double, and can accommodate four students on either side—eight in all, working simultaneously. This arrangement makes it possible for 112 students to work and receive instruction at the same time, without in any way interfering with one another. Each student has a working space of 3x2 feet, allowing ample room for the proper use of apparatus, such as will be required in the various manipulations. Each working space, again, is supplied with three drawers and three closets, in each of which a complete outfit of apparatus is stowed away. This arrangement enables 336 students to receive instruction and carry on the required operations without in any case employing a fellow student's apparatus.

Each desk is provided with about 75 bottles of appropriate size, containing chemicals and pharmaceutical preparations, such as are best adapted to the uses of the department. These will be added to from time to time as occasion demands.

Two movable slides are attached to each desk, one replacing the customary filter-stand, the other being used for various purposes. Hot and cold water have been supplied, and ample provision for lighting has been made, so that each desk represents a model dispensing counter, with balances, graduated measures, mortars, spatulas, labels, bottles, pill boxes, etc.

For purposes of instruction, the classes will be divided in as many sections as is found practical, only one section receiving instruction at any one time.

The instruction offered by the new department is intended for both the Junior and Senior classes, and will embody such subjects as pharmaceutical manipulations in general; the correct use of the different apparatus and utensils, prescription incompatibles, and such other subjects as are required to complete the practical education of the modern pharmacist.

It is not intended that the instruction obtained and the experience derived from this department, shall in any sense of the term supplant that which the student obtains in the drug store. It is rather intended as an adjunct to such practical experience as may be derived from the latter source. Its entire aim and purpose is to give students practical instruction in Dispensing Pharmacy, such instruction as it has been hitherto unable to offer, with the resources at the command of the teachers.

Particular attention will be given to the subject of chemical and pharmaceutical incompatibles. Prescriptions embracing such, as well as prescriptions containing an overdose of some ingredient, or such as are illegibly or ambiguously written, will be given to the students to compound. Many of these will be prescriptions that have actually been presented at drug stores. This entire subject will be of particular value to members of the senior class.

All work done by students will be under the direct supervision of the Professor in charge, and his assistants. This will insure each student an excellent opportunity to become thoroughly proficient in this direction.

The department will also be placed at the disposal of the New York City Board of Pharmacy, so that applicants for certificates may be subjected to a thorough, *practical* examination in addition to the customary theoretical one.

The Trustees will not as has been erroneously stated in the pharmaceutical press, manufacture preparations and offer them for sale, nor is it intended that prescriptions for the general public are to be filled free of charge, nor for any pecuniary consideration.

Text Books Required by Students of the College of Pharmacy of the City of New York.

FOR JUNIORS.	
Elliott's Qualitative Analysis	$1.50
Peck's Ganot's Physics	1.20
*Coblentz's Handbook of Pharmacy	3.50
The Human Body, Martin	2.50
¶Essentials of Pharmacognosy, Rusby & Jelliffe.	2.50
*Art of Dispensing, Scoville	2.50
*The U. S. Pharmacopœia, [1890] Cloth	2.50
*The U. S. Pharmacopœia, [1890] Sheep	3.00
*Pharmaceutical Chemistry, Sadtler & Trimble,	4.00
or Richter's Inorganic Chemistry	1.75
FOR SENIORS.	
Remsen's Organic Chemistry	$1.20
White, Materia Medica and Therapeutics	2.75
Maisch, Organic Materia Medica	2.40
FOR POST-GRADUATES.	
Essentials of Bacteriology, M. V. Ball	$0.80
Gray's Manual of Botany of the Northern U. S.	1.60
Quantitative Analysis, J. H. Appleton.	

*Books marked * are required by both Juniors and Seniors.

¶Books marked ¶ are required by Juniors and Post-Graduates.

Works of reference can be consulted in the library.

Special text books will be furnished at lowest prices on application to Mr. O. J. Griffin, clerk to the College.

HISTORY AND NAMES OF RHAMNUS (PURSHIANA CASCARA SAGRADA.)*

By Prof. J. U. Lloyd.

Contribution of the Research Committee of the American Pharmaceutical Association.†

In a paper contributed to *New Preparations*,‡ October 15, 1877, p. 8, the late Dr. J. H. Bundy, an eclectic physician of Colusa, Cal., recommended cascara sagrada as a valuable remedy in the treatment of constipation. This notice was by means of a brief note that was part of a paper on Berberis aquifolium, Dr. Bundy promising, however, to give it further attention, as follows :

"It not my purpose to treat on cascara sagrada in this paper ; but, using it in connection with the Berberis, I simply make mention of it. In the future I will introduce this drug to the profession.

This, so far as the writer can determine, was the first reference concerning this remedy in pharmaceutical or medical print. Agreeably to promise, in January, 1878,§ Dr. Bundy contributed a paper on the subject of cascara sagrada, in which he gave the uses of fluid extract of cascara sagrada. Following this came many papers from Dr. Bundy and other physicians, twenty contributions on the subject being printed in *New Preparations*, 1878, to which journal, with few exceptions, the subject was confined during 1877 and 1878. Dr. Bundy stated in his paper (1878) that : "A description of the cascara I am unable to give at this time ; but suffice it to say that it is a shrub, and in due time its botanical name will be known." He neglected, however, to concern himself further in the matter.

In the fall of 1878, Dr. C. H. Adair, of Colusa, Cal., a partner of Dr. Bundy, sent the writer specimens of the bark and botanical specimens of the tree yielding it. These, on identification by Mr. Curtis G. Lloyd, proved to be Rhamnus purshiana. This fact was announced in a paper on "Some Specimens of Western Plants," presented at a meeting of the American Pharmaceutical Association held in Atlanta, Ga., November, 1878 (*Proceedings*, 1879, p. 707), and completed the drug's history.

Names.—Dr. Bundy supplied the drug under the Spanish name, cascara sagrada, which name is said to have been in local use throughout some sections of California, and soon came to be the common name of the drug. It will surely dominate all others as long as the drug is in use. The Anglicized name sacred bark, has also been applied to the drug, and the Scriptural term, *Chittim bark*, was also employed in early days in some parts of California ; but these last names are now obsolete.

Summary.—To Dr. J. H. Bundy, Colusa, Cal., 1877, is due the credit of introducing the bark of Rhamnus purshiana (cascara sagrada) to the medical profession.

To *New Preparations*, Parke, Davis & Co., Detroit, Mich. (1877 and 1878), is due the credit of bringing the drug to the attention of physicians and pharmacists.

To Parke, Davis & Co., of Detroit, Mich. (1878), is due the credit of making the first pharmaceutical preparation (the fluid extract), and of bringing this preparation into general conspicuity through their advertisements and business connections. It may be said, without danger of controversy, that this firm introduced and established cascara sagrada as a remedy.

To Dr, C. H. Adair (1878), of Colusa, Cal., is due the credit of furnishing the botanical specimens that furnished the drug's botanical position.

---

*Read at the meeting of the American Pharmaceutical Association, Montreal 1896.

†Introductory to a contribution on a chemical investigation of Rhamnus purshiana, undertaken by Alfred R. L. Dohme.

‡*New Preparations.* Detroit : Parke, Davis & Co.

§ *New Preparations*, January, 1878, p. 1.

Legal Notes.

In the case of John D. Parks & Sons Co. vs. National Wholesale Druggists Association, Mr. Justice Russell has continued the injunction pending the trial of the action, enjoining the defendant "from conspiring or combining together or with any other person or persons to prevent the plaintiff from freely purchasing proprietary drugs and medicines, or other goods, * * * But the defendants are not enjoined from obtaining or imparting information as to the manner in which the plaintiff conducts its business or any violation of any agreement with any specific manufacturer or wholesale dealer, and neither of the defendants is enjoined from making any agreement with the plaintiff or any other person fixing the price of sale of his or its particular line of goods."

As is well known, the National Wholesale Druggists Association is organized to prevent the cutting of prices and for the mutual benefit of the members generally. It seems that the Parks Co., violated the cutting agreement, then suffered the penalty for such violation and now seeks to enjoin the N. W. D. A. from preventing them from purchasing proprietary articles.

The facts being presented by affidavit do not permit of the same depth of enquiry that a trial does, and from the gist of the opinion, I gather that the injunction will be dissolved when the action is tried.

FROM the facts in the recent case of Hatterman vs. Siemon, it appears, the plaintiff was "required to wash and laundry underclothing impregnated with a loathsome veneral disease and thereby plaintiff contracted said loathsome disease." For the safety of the laundress might it not be well for physicians and druggists to warn such patients of the liability they incur by carelessness?

I wonder do my friends, the pharmacists know that the following law is on the Statutes? I didn't:

PRESCRIPTIONS OF OPIUM, MORPHINE, COCAINE AND CHLORAL.

"No pharmacist, druggist, apothecary or other person shall refill more than once, prescriptions containing opium or morphine or preparations of either of them or cocaine or chloral, in which the dose of opium shall exceed one-quarter of a grain, or of morphine one-twentieth of a grain or of cocaine one-half of a grain, or of chloral ten grains, except on the written order of a physician."

Sometime ago I called the attention of the JOURNALS' readers to the preliminary educational requirements of the various professions. Within the past two years the standard of preliminary education has been raised in Dentistry, Medicine, Veterinary Surgery and Law. Pharmacy alone has the questionable distinction of licensing people to assume the responsibility for the life and death of human beings without testing their intelligence and general knowledge.

I have heard old druggists say that it made no difference what a man knew about Organic Chemistry or the ordinary high school branches as long as he could buy and sell well he was a good pharmacist and would be successful.

The test of fitness to practice now seems to be that the candidate has washed bottles four years, can distinguish a few roots and herbs and the properties of a few drugs; his reasoning capacity does not enter into consideration at all. That he is able to act intelligently on all occasions seems of no consequence.

Frequently physicians err in their prescriptions and the pharmacist's duty is to correct such errors. He must be able to reason to an intelligent conclusion, but how can he without a high grade of intelligence?

Why not require pharmacists to pass an examination in preliminary education the same as students in the other professions? Why is not a knowledge of History, Geography, English Grammar and Arithmetic just as important to a Pharmacist as a Physician or Dentist? Why should Pharmacy stand out alone and say that an academic education is not absolutely necessary to social, business or professional success?

H. A. HEROLD.

THE PRACTICE OF PHARMACY IN NEW SOUTH WALES.

Under the present law in New South Wales almost anyone who wishes can go into business as a chemist and druggist. The law only interferes when the Sale and Use of Poisons Act is infringed; but as these unqualified persons who act as chemists all over the country are not registered there is practically no check. In a recent famous criminal case, arsenic had been purchased from a person in business as a chemist, but not registered. Had he been registered he would have been compelled to keep poison-book and the purchase could have been traced, but not being of a certain status he did nothing of the kind, and the fact of the purchase was only ascertained with great difficulty. As the law stands, hospital wardsmen who have assisted in making up prescriptions, doctors' grooms, and sailors who have helped ship surgeons carry on drug stores.

THE
Alumni Journal

Published Monthly under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. October, 1896 No. 10

SUBSCRIPTION:
Per Annum, . . . One Dollar
Single Copies, . . . 15 Cents.

All communications relating to subscriptions for the Journal, should be addressed to Nelson S. Kirk, 9 East 59th Street, New York City.

All communications intended for the Editor, original contributions, exchanges, books for review, etc., should be addressed to
Alfred H. Mason,
59 Maiden Lane,
New York City.

All communications relating to advertisements or to the business of the Journal, should be addressed to
Thomas M. Davies,
543 Third Avenue,
New York City.

All copy for publication, (written on one side of the paper only), or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

EDITOR.
ALFRED H. MASON, Ph. C., F. C. S.
CONTRIBUTORS:
Alumni Association,
Wm. Hoburg, Jr., Ph. G., 115 West 68th St., New York.
Alumni Notes, Socials, etc., and Classes prior to '93.
Geo. F. Burger, Ph. G., 115 West 68th St,, New York.
Bibliography,
Adolph Henning, Ph, G., 68 William St., New York.
Class of '93,
Eugene F. Lohr, Ph. G., 375 Third Ave., New York.
Class of '94,
Nelson S. Kirk, Ph. G., 9 East 59th St., New York.
Class of '95,
B. Dauscha, Ph. G., Caldwell, N. J.
Class of '96,
J. Hostman, 204 Bowers St., Jersey City, N. J.
Class of '97,
Q. E. D.
Legal Notes,
H. A. Herold, 34 Pine St., New York.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

The first popular lecture of the season, given under the auspices of the Alumni Association, will be delivered on Wednesday evening, October 14th, at eight o'clock, by Mr. Hermon Henneberger; subject, "Norway, The Land of the Midnight Sun." The lecture will be illustrated by stereopticon views, which were taken by the lecturer during his tour from Christiana up along the Fjordes to the North Cape. There is no charge for admission, and the friends of the Association and of the College are cordially invited.

The next stated meeting of the College will be held Tuesday evening, October 20th, at eight o'clock.

The students' roll at the College on September 26th numbered: junior class, 168; senior class, 141; post-graduate class, 11.

We print the list of names of graduates from the College since its foundation. We are desirious to obtain, as far as possible, information respecting the history and location of those who are living, that they may be brought in touch with each other. This is successfully accomplished by other colleges.

In printing Prof. Bretton's address on "Botanic Gardens" (which is taken from *Science*), we wish to make our readers aware of the organization of the New York Botanical Gardens, and call attention to the great importance of a co-operative relationship between it and the College of Pharmacy, to afford facilities for information in that branch of science wherein they can be so mutually beneficial. We look to Dr. Rusby to bring this about, but we cannot ask him to do so without material support from the College.

THE dispensing department fills a want and the Section Committee make a good move in securing the co-operation of the Board of Pharmacy to insist that candidates appearing before the Board shall have their knowledge of dispensing practically tested before a certificate of proficiency is granted to them. The next examination by the Board will be held October 12th.

THE first meeting of the session of the New York Section of the Society of Chemical Industry will be held at the College, Friday, October 23d, at eight o'clock. The Chairman, Prof. C. F. Chandler, will deliver an address, and important papers will be read. The Trustees of the College generously grant the use of the Lecture Theatre for these meetings, and in return the members of the College and Alumni Association are invited to be present.

THE reporter to the *Pharmaceutical Era* was wrongly informed if he was told that medicines prepared in the dispensing department would be given away to charitable institutions. Such an idea is too absurd.

NEITHER a trustee nor member of the faculty of the College is named on any of the committees of the New York State Pharmaceutical Association for 1897.

IT is reported that one of the satellites of the "Druggists Circular" whilst walking along the street during the "silly season" was attracted by a small crowd looking at the display in the window of a taxidermist. Noting the object of interest, he observed—"Well, if I could not stuff a bird better than that I would go out of the business—what a shape the body is, look at the feathers misplaced; see the position of the legs; whoever saw an owl stand like that? and the head"—just then the owl turned and winked his eye. The lookers on smiled, the speaker sneaked away, feeling hazy after such a brilliant exhibition of his powers as a critic.—*McOrley.*

Alumni Association.

Regular meeting of the Alumni Association was held on Wednesday evening, September 16th. The meeting was called to order by President Searles.

Present: Messrs. A. Henning, '76, A. C. Searles, '84, D. T. Larimore, '85, Geo. C. Diekman, '88, K. C. Mahegin, '89, J. Tannenbaum, '93, Dr. Kreuder, H. A. Herold, L. G. B. Erb, Chas. Stoerzer, T. M. Davies and Nelson S. Kirk, '94, B. F. R. Dauscha, J. Aquaro and H. B. Ferguson, '95, Edward Uhe, J. Hostmann, F. L. Perilla and Thos. LeClear, '96.

Minutes of last meeting were read and adopted. Communications from Fred. Hohenthal and Chas. S. Erb, regarding A. Ph. A. appointment were read and ordered filed.

Communication from Joseph Kussy, resigning associate editor of the ALUMNI JOURNAL was read and the Secretary was instructed to thank Mr. Kussy for valuable services rendered.

Two bills from the Freytag Printing Co., amounting to $9.00, were placed in the hands of an auditing committee consisting of Messrs. Tannenbaum, Kreuder and Davies, and being found correct, were ordered to be paid.

The report of the "Outing Committee" by Mr. Davies was then read, report showed a surplus, and was accepted; the committee being discharged with thanks for their services.

Mr. Davies then reported verbally for the last "Ball Committee." Report accepted.

Mr. H. A. Herold, chairman of the "Papers and Queries Committee" reported as having secured the following gentlemen for lectures this winter: Dr. Elliot on "Photography;" Dr. Rusby on "The Delta of the Orinoco;" Mr. Geo. W. Hopping on "Business Hints;" Mr. Henneberger on "Norway." with stereopticon views. Accepted.

Mr. Nelson Kirk for the Entertainment Committee reported progress. Report accepted.

Mr. J. Hostmann then moved for the appointment of a "Ball Committee" of five. Committee to report at next regular meeting, as to time and place of the second annual ball. Seconded by Mr. Henning. Carried.

Mr. Davies then moved that the Secretary's list of addresses be revised and entered into a specially prepared roll book, same to be kept up to date.

Mr. Davies moved that a committee of one be appointed to purchase and keep in order, a scrap book for the preservation of Alumni notices.

Upon motion, the meeting adjourned to Friday evening, September 25th, at 8 o'clock.

W. A. HOBURG, Jr., Secretary.

College Notes.

We desire to obtain information concerning those who graduated from the College of Pharmacy of the City of New York. It has been suggested that a list of names with records of the residence and occupation of those who are living, should be obtained and published for distribution amongst the graduates, that old friendships may be renewed and a more lively interest taken in the welfare of those who should be in touch with their Alma Mater. This is successfully accomplished by other colleges, and the editor will be glad of any assistance from those named in the list herewith, so that a report carrying out this idea may be completed as soon as possible. Kindly give the matter prompt attention, and address all communications to the Secretary, College of Pharmacy, 115 W. 68th Street, New York City. Should this copy of THE ALUMNI JOURNAL be made use of to furnish the information, a duplicate will be sent on request.

GRADUATES

OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

1831

*Close, George C.
*Lake, William W., Jr.
*Thurman, Washington M

1832

*Coddington, James
*Lewis James
*Matras, John T.
*Smith, Jas. W.

1833

Carr, John

1834

*Elderkin, John
*Hallock, James C.

1835

*Brigham, William
Hooper, Josiah
Rubio, Felix G.

1836

*Green, Thomas T.
*Loines, William H.
*Mead, John
*Meakim, Alexander
*Meakim, John
*Robbins, Daniel C.
Sams, Alexander B.

1837

*Downing, Thomas K.
Everett, Horace
*Graverend, Raymond
Hallock, Allen C.
*Hegeman, William
*Hilton, James
Sanderson, Robort T.
Vail, Addison

1838

*Bailey, Lafayette
Hinsdale, Samuel J.
*Southwick, Geo. W.

1839

DuPuy, Eugene
*Loines, John
Purdy, David M.

1840

Clark, Nathaniel

1841

Calam, Henry
*Coggeshall, Josias H.
Fairchild, John
Snowden, John

1842

Hatch, Isaac S.
*Hegeman, Adrian
Ward, Samuel

1843

1844

*Adamson, John C.
*Dascey, John
McCloskey, David W.
*White, Philip A.

1845

*Bull, Buckland, W.
Riker, William B.
*Roberts, Joseph

1846

Parsons, Henry L.
Tittle, Geo. A.

1847

*Cushman, Alexander
McIntyre, Ewen
*Sing, John B.
Smith Robert B.
Snowden, Thomas

1848

*Canavan, John

1849

Nietsch, Adolphus

1850

1851

Holland, Henry
Samson, Proctor C., Jr.
Shiels, Geo. E.

1852

Combs, Richard F.

1853

Gambrace, Thomas E.

1854

Nolan, Patrick
Rocke, James
Wall, Charles E.
Wright, William, Jr.

1855

Berrian, Geo. W., Jr.
Brenard, Julius

1856

*Fougera, Edmond C.
Hamilton, George A.
Milhau, Edward L.

1857

1858

Bedford, Peter W.
Carter, Chas.

1859

Figueroa, Raphal
*Fogt, Francis

1860

Ball, William
Canavan, George
Fairbrother, Charles M.
Lehn, Louis
Weinman, Oscar C.

1861

Creuse, Jules L. A.
Hays, Benjamin E.
Lalor, William
Martin y Piera, Eugenie
Morgan, James F.
*Peyron, John B.
Pressinger, Augustine
*Scott, Horatio
*Wheeler, Walter G. J.

1862

Krehbiel, Gustavus
Troilet et LeLievne, Ernest
Waugh, George J.
Weismann, Augustus W.

1863

*Figueroa, John F.
*Frohwein, Theobald
Higgins, James S.
*Kimmel, Henry
Putnam (Jacobi) Mary C.
Smith, Charles E.
Villaverde, Emilio

1864

Sands, George G.
Skelley, James J.

1865

Best, John
Buceta, Ramon
Colby, Ferris W.
Etheridge, Frank
*Frohwein, Maximilian
*Kennedy, Robert C.
Xiques y Zebada, Emilio

1866

Beach, James G.
Krehbiel, Hermann
Rano, Charles O.
Rice (Royce) Lucien M.
Weeks, Eugene J.

1867

Arze, Frederick
Dunn, John A.
Eberhardt, John H.
Ehlers, John H.
*Musgiller, Frederick C.
Prowitt, Charles S.
*Rogers, John
Vogel, Richard

1868

Cunningham, George P.
Green, William H.
Morse, Henry C.
Osborn, Hampden,
Plessner, Paul
Snelling, Alonzo F.
*Wenzel, William

1869

*Covell, Thomas J.
Evans, Geo. A.
*Neergaard, William, Jr.
Phillips, George W. C.

1870

Ballard, John W.
Brettman, Frederick J.
De Leon, Thomas D.
*Domas, John M.
Muir, William
*Plum, Charles S.
Rafael, Enrique
Rains, Thomas B.
Ribas, Sebastian
Starr, Thomas
Stohlmann, William F.

1871

Brandt, William F.
Bung, Theodore M.
Henes, Edwin
Main, Thomas F.
Mauch, Joseph B.
McIntyre, Byron E.
Porter, Henry C.
Riegel, Louis
Schwartzel, Joseph A.
Webber, Joseph
Wienges, Conrad

1872

Caille, Augustus G.
De La Calle, Pedro
Essig, George
Formel, Julio Z.
Frost, Thomas R.
Jones, Frank S.
Papst, Charles
*Ringler, Charles F.
Tucker, John Henry

---

* Deceased.

1873

Ambler, Starr H.
Ayres, Chester D.
Briggs, Alanson F.
*Falke, William
Forbes, Victor E.
*Gannon, John
Goode, Benjamin W.
Hasslocher, John B.
*Henes, W. F.
Holzhauer, Charles
Kalish, Julius
Kissam, Warren S.
Kuehn, A. F. G.
Master, David, Jr.
Mayer, Emil
Meschenmoser, Wilhelm
Meyer, Joseph
Morje, Benjamin
Peraza, Domingo
Peterman, John F.
*Robbins, Charles A.
Roth, William G.
Runyon, Edward W.
Schleussner, Charles F.
*Schreck, Ernst A.
Seelbach, Gustavus
Shearer, Edgar T.
Slipner, Nicholas
Syvarth, Henry
Vanderbeugle, John
Van Namee, Eugene C.
Watson, Jewett W.
Weberly, Charles H.

1874

Ashley, George N.
Beck, Alexander
*Bond, Joseph R.
Boyken, J. Adolph
Braun, Louis E.
Broas, John S.
Buckhop, Louis F.
Cassebeer, Richard B.
Clausius, Max
Cohen, Louis S.
Cole, Frank O.
Dougan, John W.
Engel, H. Adolph
Eschmann, Clemens L.
Faber, Sidney
Ferrier, John W.
Griffith, William H.
Hussa, Jaroslav M.
Kuehne, Richard
Lagerstedt, C. Axel F.
Meier, Gottlieb
Mitzenius, Charles
Nadler, Frederick C.
O'Neil, Henry M.
*Perck, Charles
Smith, Albert C.
Townsend, William I.
Vetter, C. Ernst
*Wendler Bernhard
Werner, Gustav T.
Weyh, Robert G.
Wichens, Frederick
Yatman, John L.
Zellhoefer, George
Zoeller, Robert G. L.

1875

Cook, Alfred W.
Cook, Frederico
Davren, James N.
Davis, David R.
Dilthley, Frederick
Dudley, Oscar E.
Erhard, Albert C.
Gill, Henry S.
Griessmann, Monroe C.
Grossmann, Carl
Hays, Benjamin F.
Herman, Frederico F.
*Herzog, Carl
Knapp, Frank
Kuehn, J. A. August
Lorenz, Carl
Mack, Adolph
Meyer, C. Justus
Minor, Cyrus W.
Morck, Albert W.
Neufield, Albert W.
*Nichols, Stephen B.
Parsons, Matt. W.
Regan, John P.
Reuter, Richard
Safford, E. Earl
Sagarra, John B.
Stammler, Charles E.
*Stevens, James T.
Stoner, George W.
Talson, Joseph F., Jr.
Tindall, Graham McF.
Turner, Frederick W.
Van Buskirk, Luther
Walther, Edward
Wilms, George L.
Wurthman, John F.

1876

Blumauer, Lewis
Booth, Clarence F.
Boyle, James P.
Castano, Augustus R.
Coit, H. Lieber
Dovell, Albert
Eberhardt, George
Falkenreck, Frank H.
Fountain, George C.
Frohwein, Otto T.
Guenther, Albert T.
Heidingsfelder, John E.
Henning, Adolph
Herdling, Victor
Kuehne, Frederick
Knapp, Gilbert P.
Laue, Otto G.
Lehman, Henry
Liell, William J.
Linnett, Alexander M.
Maass, William
Magee, Thomas J.
McIntyre, Ewen, Jr.
Millar, James
Morrill, James K.
Paradis, Adrian
Payne, George F.
Pembleton, Henry F.
Quackenbush, Benj. F.
Rothe, Gustavus
Schranck, Henry C.
Schumann, Peter J.
Spear Theodore A.
Staehle, Louis L
Striker, Henry A.
Thieme, Theodore
*Tomas, Joseph E.
Townsend, William H.
Wenzel, J. H.

1877

Avery, Abbott L.
*Basora, Adolph
Benham, Edward N.
Boediker, Otto
Boyken, J. Anton
Bradley, Simeon C.
Breitenbach, Max J.
Broguet, Edward
Colby, Willis D.
Corwin, Fred. M.
Doepfner, Eugene
Duteil, Victor
Egge, K. Julius
Fries, Peter
Frost, William A.
Garrison, Frank
Getty, Wilmot S.
Goetz, Julius
Hebig, William
Heidt, Thomas P.
Henry, Ferris W.
Howe, Charles L.
Hund, Otto H.
Hunt, Effingham L.
Iler, Robert L.
Kingston, Robert J.
Klippert, Charles F.
Kopf, Henry
Lawler, Charles J.
Leister, Ernst F.
Levy, Adolph
McMahon, Joseph
Montanus, Ernest, Jr.
Neubauer, William G.
Nowill, F. Herbert
Parker, John H.
Pauly, Christian N.
Rieger, Hugo
*Rose, J. Thurston
Routh, Jenson P.
Schmid, Henry
Schoelles, William
Schoenchen, George T.
Schoenfeld, Conrad
Schrader, Herman von R.
Speck, Oscar O.
Stahl, Edward A. J.
Stegmair, Julius A.
Teschner, Jacob
Van der Emde, Henry
Van Duzer, William A.
Weber, Paul
Wells, Francis B.
Winkelmann, John G.
Zoeller, Edward V.

1878

Bagley, George P.
Baxter, Albert P.
Behrens, Albert C.
Behrens, Herman L. F.
Boles, Patrick B.
Brunner, Charles W.
Burgtof, Theodore R.
Dougherty, Samuel E,
Drescher, Max F. C.
Edlich, Adolph A.
Evans, Henry W.
Gans, Gerson,
Glatzmeyer, William
Hays, George D.
Heller, Theodore F.
Huber, Daniel Jr.
*Inness, George
Jacobus, John B.
Keeler, William H.
Ketchum, Leander Y.
Koehler, Charles G.
Kunath, John B.
Leibe, Daniel
Liell, Edward N.
Luerssen, Frederick W.
McIver, Silas
Metzger, John
Miot, Robert C.
Moore, Silas H.
More, Arthur J.
Mueller, William H.
Pottberg, Charles
Reynolds, Charles E.
Reynolds, Richard G.
Riecker, William F.
Roth, Edward
Schelpert, John W.
Schlesinger, Leopold J.
Schofield, William H. H.
Schreyer, George
Smith, William A.
Snelling, Andrew T.
*Stevenson, Alexander F.
Thurn, Louis
Uber, Adolphus G.
Vandenhenden, Richard
Walker, William M.
Wiesmann, Louis F.
Wimmer, John

1879

Abraham, Samuel
Bangert, Louis
*Barbarow, Samuel M.
Bartlett, Smith
Braeutigam, Conrad W.
Breiting, Ernst
Breuning, John
Brewer, Percival
Brugman, Alfred F.
Burger, Christian F., Jr.
Callaghan, Bernard F.
Casey, M Frank
Cassebeer, Frederick
Cassebeer, Herman F.
Chagnon, Thelesphore
Cutts, Foxwell C.
Davidson, Charles N.
Doepfner, Carl
Dorestan, Hick
Ebbitt, William H.
Faber, E. Walter
Feindt, Louis E.
*Fowler, William W.
Frazee, George B.
Freygang, Charles W.
Frohwein, Paul L.
*Frohwein, Theobald R,
Gerrity Dennis
*Golm, J. Louis
Heldt, Martin, J.
Hendrickson, James L.
Herdling, Frederick
Hoerle, August
Hoerning, G. H.
Isea, Hermagoras
Kremer, John, Jr.
Kuehne, Henry E. C.
Mahler, Matthew
Martin, George
May, Charles H.
Meseritz, Isaac
Moll, Charles P.
Morehouse, James T.
Muellenbach, Robert
Nauheim, Simeon
Neergaard, Sidney H.
Oehler, John
Orlewitz, Herman
Osswalt, Jacob
Petri, Frederick
Pfeiffer, Jonas
Redder, George
Rogers, Floyd W.
Sawyer, Hilton H.
Schick, Gottlieb
Schleckter, Henry J.
Schlegel, Gustavus
Smith, Frank A. D.
Taylor, Mallory H.
Vorhees, Greenleaf
*Washburne, W. W.
Weidenfeld, Joseph
Werner, Rudolph C.
Wiener, Alfred W.
Wilhelm, Alvin J.

1880

Albert, John, Jr.
Bergara, Emilio
*Bisky, Julius A.
Blair, Willis P.
Breiting, Herman
Comstock, James C.
Dahlbender, Joseph
Denton, Eugene W.
Disbrow, William S.
Duffy, Charles H.
Feil, Joseph
Fiero, Frank W.
Frank, Henry F.
Grenzelbach, F. A.
Herb, Joseph A.
Julius, Ferdinand
Kirschner, Albert A.
Klinkenberg, Otto
Koehler, Alvin G.
Koertge, Albert T.
Kolasky, Henry M.
Kraft, George, Jr.
Lahey, Salvadore P.
Lins, Albert H.
Livingston, B. H.
Merritt, Albert A.
Meyer, Charles
*Morris, Frank L.
Nadler, Frank L
Nauheim, Samuel
Paulsen, J. J. R.
Proben, John A.
Scheu, Philip
Schmidt, H. C.
Schneider, Charles J.
Schultze, Felix T.
Stiebeling, Oscar W.
Strahlmann, F. G. E.
Tack, William

---

* Deceased.

Thomm, H. C.
Van Deinse, G.
Whittet, John A.
Wustrow, Max
Zeuschner. H. P.

1881

Avme, Edward L. E.
Bodebender, William
Bodenstab. Charles A.
Braeunlich, Henry U.
Bruckmann, Charles G.
Bruckmann, Frederick W.
Brunswig. Ludwig
Cahn, Benjamin
Clark, Philip K.
Cohn, Isaac
Cuevar, Luis E.
De Lano, William
Dewender, William H.
Dumond, William R.
Fisher, Arthur
*Fridenberg, Eugene L.
Funnell, Harry H.
Geiger, G. J.
Gundlach, Frank
Hamerslag. Henry
Hand, Thomas A.
Hanke, Rudolph
Hanmore, Louis E.
Heebner. Charles F.
Hess. Louis
Hohenthal, Frederick
Holthusen, Emil T. Fr.
Hooker. George Breck
Hurd, Ellison W.
Jones, Thomas J.
Jones, William Th.
Kahlenberg, Franz
*King, Joshua O., Jr.
Klamer, Hugh
Kordenat, Carl Fr. W.
Laue, Johannes M. A.
Leuschner, Abraham
Linke, E. H. Oscar
Lord, Charles F.
May, Arthur F.
Mayer, Charles F.
McCann, Walter S.
McEwen, Wellington C.
Metz, Hugo L. M.
Miller, Edward
Monroe, Lucius M., Jr.
Nicoud, Henry E.
Pfeiffer, John
Powell, F. L.
Rauth, Emil
Roeber, Gustavus W.
Roenbeck, Charles
Rossell, J. H. Jr.
*Rosenkranz, Fritz
Roth, Frank M.
Roth, Henry C.
Ruppel, Frederick E.
Sahner, George N.
Snowden, Rene Ravenal
Starr, David H.
Theis, Rudolph
Van de Bergh, Aloys J. H.
Wernicke, Egon C. B.
Wortmann. Herman
Wurm, Carl

1882

Baker, Henry C.
Beavers, John
Bischof, Louis I.
Boehme, G.
Bohmfalk, H.
Bosch, Fred., Jr.
Bradley, C. Cole
Branigan, James E.
Burrows, William A.
Chapin, Henry A.
Clarke. J.
Cooke, G. H.
Dahlbender, George
Dakin, R. B.
Denicke, E. A.
Doring, J. F.
Eckert, J.
Ettinger, B.
Everett, W. V.
Fenn, F. W.
Fieger, F. L.
Fischer, Louis
Foland, J. P
Gastmeyer, Robert
Goemann, H.
Hedenberg, J. M.
Heffter, George O.
Hoffmann. H. E.
Hommell, P. E.
Hoops, H. W., Jr.
Hunte, W.
Hutchens, J. H.
Jackson, J. E.
Jantze, O.
Johnson, W.
Lesser, Louis H.
*Lowenstein (Lowen) J.
Lutz, Theodore
Manck, J. P.
McLaughlin, W. J.
Minrath, George
Morgan, D. R.
Moriarta, D. C.
Nadler, H. G.
Nascher, I. L.
Newby, G. R.
O'Connell P.
O'Reilly, Philip
Parshall, W. J.
Parsons, J. C.
Passmore, Charles A.
Petty, E. R.
Purdy, H. R.
Rafter, Michael
Roese, Henry V.
Ruppert Ferdinand
Schneider, G. E.
Schoonover, J. Ray
Sedgwick, E. M.
Sickenberger, Ernst F.
Sieburg, R.
Siegenthaler, H. N.
Simpson, W. E.
Smith, T. A.
Sterns, William
Stolzenburg, G. C. P.
Tallman, C. E.
Teubner, Charles
Tyler, W. H.
Underwood, A. F.
Vosseler, A. C. G.
Wagner, O.
Walker, R.
Walters. Max L.
Warsaw, M. C.
Watkins, Fred. I.
Wenzel, Fred. Jr.
Westbrook. G. F.
Winters, E.
Wirth, F.
Wischerth, J. G.
Woelfel. J. Jr.
Wray, George B.

1883

Abrams, Clarence S.
Averbeck, Maximillian J.
Becker, F. W.
Blauw, Charles
Boyd, F. H.
Browne, Alfred L.
Bruning, G. H.
Buell, Daniel H.
Burns, William J.
Colp, J.
Cook, Ansel G.
Dankel, Julius A.
Dart, George
Diedel, G. A.
*Dorr, Edward W.
Eberhardt, L. A.
Eschmann, A. R.
Ettinger. H.
Frey, Walter G.
Funnell, William S.
Gerstlè, Edward G.
Goldman, Oscar
Grafton, John
Grassmuck, P.
Halsted, Alfred T.
Haverstick, Willis N.
Heineman, Herman
Hubachek, J.
Johnston, H. S.
Klein, H. E.
Kopf, J. L.
Kraemer, C. C.
*Kraft, Joseph
Lamb, George
Lawall, W. S.
Leister, Otto
Link, Philip
Mangold, W. G,
Manson, Frank H.
Marsland, A. E.
Mascher, C. H.
Miller, Theodore
Needham, George G.
Proben, Charles I.
Putegnat, J. L., Jr.
Rauschenberg, A. Sidney
Richmond, E. A.
Roediger, Louis F.
Runkel, C. F.
Savage, Henry
Shields, William F.
Speck, William A.
Spillane, John
Stover, Alfred
Wackerbarth, J.
Warsaw, I. C.
Weil, J. H.
Westermann, Philip
Westermayr, R. J.
Zitz, F. H.

1884

Bayer, Adolph Jr.
Bechtold. Gallus W.
Behrens, Charles F.
Benton, Howard A.
Bowman, Clarence D.
Buggle, Henry
Burmeister, Henry L. J.
Clark, Edward W.
Coleburn, Arthur B.
Conwell, C. Louis
Dalzell, Frank P.
Douden. Clarence O.
Essig. Frank
Francke. Theodore H.
Fougera, E. Jr.
Gesell, Charles L.
Gress, Jacob J. J.
Grimshaw. Charles B.
Hahn, Edward F.
Halpine, W. D,
Hammann, Edward
Hartmann. Ferdinand J.
Heebner, H. E.
Hepp, Theodore L.
Higgins, Bertha
Hilbert, Wesley J. N.
Holt, Edward
Jappe, Chr. F.
Kemlage, Leopold L.
Kuehne, Charles
Laubenheimer, Jacob H.
Loubriel, Manuel M.
Lucke, Reinhard J.
Merritt, Elmer H.
*Meyer, Charles N.
Miles, J. Frank
Mitchell, Edward F.
Mooney, John J.
Musler, Abram
Mutimer. George A.
Nathan, Leo R.
Race, Frank W.
Rauch, Henry
Reich, Adolph
Reuss, Emil A.
Rodemann, William C.
Rosenkranz, Ernst
Rouillion, Herbert W.
Russell, John B.
Ruzicka, Ladislav
Saile, Joseph C.
Schaeffer, A. E.
Seidler, W. F. Jr.
Shears, Joseph
Shuptrine, Willard B.
Sommerhoff, Joseph F.
Spingarn, Henry D.
Stafford, William T.
Steinwedel, Mrs. A. Harris
Terrill, James H.
Thompson, Howard E.
Van Eerde, William
Walsh, Thomas A.
Weber, Herman
Weck, William F.
Weinman, Oscar K.
Widmann, Albert V.
Willard, Clayton H.
Wuersten, Fred
Yager, Frank
Zimmermann, Albert

1885

Beck. Otto H.
Behrens, Alfred
Bergen, Johnson L.
Braunstein, H.
Briner, William L.
Brothers, Samuel
Bruen, George B.
Buck, C. H.
Buckelman, Arnold
Casselmann, J. M.
Coors, Adoph H.
Corwith, William H.
Desbecker, Daniel
Dohrenwend, Gustav J.
Dyson, George L.
Emeis, Emil T. W.
Ettinger. Vivian I.
Eyssell, Emil
Foulke, Joseph S.
Froehlich, F. G.
Gibbons, John T.
Griffin, Daniel B.
Haecker, Otto E.
Hall, W. F. Jr.
Hamilton, Albert H.
Heller, Philip
Herzfeld, Herman
Holland, A. P.
Hollinger, William
Ill, Charles L.
Jordan, H. C. L.
Kamlah, William
Klippert, Herman G.
Klippert, George
Larimore, Dudley T.
Lush, Carman R.
Maier, Otto
Marucco Eugene
Miot, Bryan Eason
Moschowitz, Alexis V.
Murphy, Thomas P.
Nason, Charles L.
Oberdoerfer, George
Otazo, y Diaz, Gonzalo
Pamphilon, Frederick H.
Peacock, Arthur S.
Penfield, Charles E.
Pignol, Charles
Porr, William H.
Regnault, O. E
Roberts, W. R.
Roethe, Charles H.
Roy, Albert M.
Rupp, Louis P.
Saul, William A.
Schleiff, F. A. M.
Schlesinger, Maurice
Schweinfurth, George E.
Seelicke, Frederick, Jr.
Shuit, Wilifred E.
Siefeyt, Carl F.
Smith, Lauriston S.
Sorgatz, Franci F.
Spingarn, Louis
Staehle, William
Stiles, Arthur R.
Thum, Fred. W.
Tongue, Walter B.
Van Derlyn, J. Du Bois
Wadsworth, P. C.
Waldie, George C.
Wardel, A. H.
Wichelns, Henry O.

---

* Deceased.

1886

Adelberg, Joseph Charles
Adgate, Miss Sarah J.
Ambrose, John F.
Bartels, Alfred
Bartruff, George L.
Beusse, Christian F. G.
Birkner, Charles
Bloch, Benjamin
Born, George H.
Bräunlich, Arthur R.
Buchbinder, William
Buderus, William
Bulson, Clarence P.
Campbell, Harry P.
Coburn, William Allis
Crawford, Charles E.
Dee, William Vincent
Downey, James M.
Edler, Otto
Ellis, Edward M.
Erb, Charles Stephan
Figueroa y Marty, Miss Dolores de
Figueroa y Marty, Miss Eloisa de
Fleischmann, Frederick
Franck, Adolph
Frohwein, Walter M.
Glokner, William
Goetting, George A. C., Jr.
Green, Simon T.
Grom, Otto C. B.
Gross, William Otto
Hake, Casper J., Jr.
Harrington, Clement D.
Haviland, Sanford Collier
Hecht, Max
Heller, George G.
Herd, William
Hitzel, August
Jones, Charles H.
Kessler, Eugene G.
Kleinau, George
Klopsch, Osmar E. H., Jr.
Koehler, W. C.
Koertge, Henry
Lehner, August
Lehritter, George Peter
Leonard, Rudolph
Ludewig, Charles H. G.
Mahnken, W. A.
Martens, John O.
Morgan, Thomas F.
Mueller, Carl F. M.
Müeller, Amandus
Noble, Ellsworth H.
Orlick, Frank B.
Osborn, S. Albert
Pallehner, Robert S.
Palmer, G. Arthur
Peck Jesse L.
Pfenning, August C.
Potts, Arthur C.
Quintana, Felix Salvador
Redmond, John J.
Reimherr, Charles
Richter, Max A.
Rosenstock, Samuel
Schirmer, William C.
Schmidt, Charles H.
Schneider, Herman B.
Schwab, Alwin H.
Searles, Arthur C.
Simon, Philip
Snyder, George St. John
Starr, William Stark
Stutzlen, Frank C.
Syms, George N.
Thomson, John Browne
Traeger, F. W.
Whitcomb, Frederick E.
Wilkens, Ernst A. W.
Winters, John H.
Wolaneck, Charles
Wuensch, Charles
Wurm, Hermann C.

1887

Aitchinson, Thomas B.
Alvarado, Jacobo
Ammon, Adolph
Asher, Philip
Atwater, Fred. C.
Beagle, Lon F.
Behrens, John F.
Blanding, Edward L.
*Bruning, John F., Jr.
*Carr, Harry W.
Carroll, Charles H.
Dall, Frederick T.
Dietz, Charles W.
Dolmetsch, Richard
Domschke, Rudolph
Duryea John
Eichacker, Henry G.
Ellison, Guy R. P.
Everest, Charles H.
Eyssell, August F.
Eyssell, Otto
Fendler, Eli L.
Fleischmann, Morris
Foster, Isaac M.
George, William
Goddard, Henry A.
Guck, Max E.
Haessig, Frank
Harding, Frederick L.
Herzfeld, Alfred A.
Heuser, William
Hollander, Max
Hopkins, Winfield S.
Huth, Edward
Ihlefeld, Hans T.
James, Abijah S.
Kellogg, Charles L.
Knapp, Louis P.
Koechert, Paul H.
Koester, Henry F.
Kolbe, W. O.
Lawrie, James T.
Mayerhofer, William
McLeod, Daniel
Meeker, Frank B.
Metz, Abraham L.
Minrath, Robert
Motschenbacher, Chr.
Muldoon, Arthur J.
Mulvany, Edward
Naumann, Augustus C.
Ost, Henry
Ottendorfer, John, Jr.
Pardington, A. Rayner
Reed, Herbert E.
Reeder, Gilbert T.
Rindermann, Emil
Roda, Frank A.
Roller, Emil
Sauer, John G.
Schimpf, Henry W.
Schlesiger, Robert
Schmidt, Henry
Schumacher, G. A.
Seither, F. C.
Settle, William S.
Shillinglaw, James
Snedeker, George W.
Stahl, John, Jr.
Sterne, Arthur A.
Thibou, Fred. P.
Uhlig G. M.
Vahlteich, John
Vockroth, Emil A.
Vogt, Henry A.
Weller, Herman
Wenzel, H. G.
Wilhelm, Rudolph E.
Wilken, Charles
Wolley, U. B.
Wulling, Frederick J.

1888

Antz, Charles F.
Arnemann, Martin, Jr.
Baldwin, George S.
Bartlett, Charles W.
Betts, William R.
*Bohata, Anthony
Bosch, George B.
Brown, Arthur T.
Brunner, Mrs. Rose S.
Buehler, Emil
Burr, Frank K.
Chase, Charles V.
Clark, J. Taylor
Couch, Francis G.
Crampton, J. Miller
Davis, Evan M.
Dickert, John G.
Diehl, August
Diekman, George C.
Dodd, Frederic E.
Doty, Cleon L.
Ely, Charles L.
Falvey, Denis A.
Fink, Henry
Frank, August
Frawley, John P.
Freiberger, Leopold
Freund, Ferdinand
Guiney, Howard P.
Hahn, Leopold
Harding, John
Herbig, John Otto
Hoelz, John Edward
Horton, John M.
Jansen, Louis W.
Johnston, Robert
Johnston, W. W.
Joye, William A.
Kalisher, John J.
Katz, Edward
Kerwin, John J.
Keyler, William W.
King, George G.
Leggett, J. Howard
Levin, Carl E. W.
Lockwood, Victor G.
Martini, R. A.
Matty, Philip
Miehling, Charles, Jr.
Miles, Harry S.
Miller, Edward F.
Miller, William P.
Muse, A. Eustace
Nicholson, W. H.
Niederer, Albert
Nowalk, Emil
Oetinger, William
Patterson, N. J.
Pichel, Gustav
Popper, Herman
Raubenheimer, Otto
Reed, Walter S.
Reeves, John G.
Rich, William P.
Richter, Armin
Richter, Oswald
Ruzicka, Drahomir
Schurr, Albert
Sears, Charles B.
Seebass, Alfred R.
Shaffler, James G.
Simon, Maxwell P.
Slonaker, Andrew G.
Socarras, Miss Angela de
Sorrow, Gustav F.
Staudenmeyer, Albert
Strauss, David
Sundermann, Richard
Tuthill, Frederic P.
Viele, Fred. C.
Volland, August
Wedel, Louis
Weiss, Emil
Wernet, Leon
Wuelffrath, Joseph
Ziebarth, Herbert T.
Ziegler, Arthur

1889

Amend, C. A. L.
Arndt, Theodore
Austin, Richard H.
Bancker, William D., Jr.
Barsky, Joseph
Beardmore, William H.
Becker, Eugene F. W.
Beekman, Henry G.
Benjamin, F. Everett
Bird, William H.
Bischof, Emil H.
Blatz, Charles L.
Boenau, Theodore C.
Boysen, Henry C.
Brandus, Gustav
Brown, Henry E.
Brown, Major C.
Brownell, Frank E.
Bru, Joaquin J.
Cahoon, Joseph H.
Comstock, James T.
Cook, Alberto R.
Daly, Peter J.
Davis, Willis O.
Dimmick, Herman H.
Eckert, Frank H.
Eisenstraeger, Henry F.
Elston, John M.
Evenden, Albert W.
Fels, Paul
Fendler, Amelia M.
Fincke, Harry S.
Fischer, Elbert E.
Flood, Ingolf
Foerster, Ernst
Gardner, Alexander
Gelbert, Daniel G.
Graeser, Herman H. R.
Hall, George E.
Hay, Edward H.
Hollinger, Aug.
Hough, Archibald E.
Hubbard, Alfred E.
Imhof, George J. M.
Jackson Alfred A.
James, Fred. K.
Joannes, Leon J.
Jones Oscar F.
Kahrs, William
Kaiser, George H.
Kalish, Oscar G.
Keale, Charles F.
Knoepfel, William H.
Kugler, William G.
Kurtz, Harry G.
Leverty, John A.
Lutz, Charles
Madison, William H.
Magenheimer, Chr'n H.
Mahegin, Katherine C.
Martin, John F. H.
Mathews, Henry
McDonald, Thomas H. A
McDermott, James
Milligan, Robert E.
Mills, Henry M.
Millspaugh, Willette
Monaghan, Seraphine
Morey, John H.
Murken, Andrew P.
Oettel, Felix A.
Oltmann, Henry A.
Overmiller, Noah A.
Plump, Frederick H.
Quencer, William J.
Rheineck, William M.
Roese William, Jr.
Schaefer, George J.
Schine, Charles A.
Schmidt Adolph
Schroeder, Frederick O.
Schwarz, Samuel
Seither, Louis C.
Sevin, Frank D.
Siemann, Fred. H.
Sniffen, Willard S.
Sowa, Charles
Spaeth, George F.
Spaeth, Otto C.
Stein, Otto Max
Steinhart, Albert P.
Stemmermann, Wm. H.
Strassberger, Gustave
Terry, Alfred F.
Thum, George C. E.
Trautmann, Carl E.
Vorhees, Albert V. B.
Walter, Henry
Weigand, Julius A.
Wheeler, William H.
White, William S.
Williams, Charles H.
Williams, George N.
Woldert, Edwin A.

---

* Deceased.

Wolf, August S.
Yahnig, George E.

1890

Arnold, John P.
Badger, Gurdon S.
Bailey, Charles S.
Beegle, Sumter L.
Benkendoerfer, Carl
Bischof, Charles T.
Braecklein, Hugo A.
Brann, Samuel
Braunlich, Hugo G.
Brown, Charles H.
Brown, Lewis W.
Carpentier, Marius A.
Carver, Conrad G.
Cline, Raoul R. D.
Crosby, May V.
Dennis, William E.
Dickinson, Arthur L.
Du Bois, Arthur
Doolittle, Frederick D.
Dubus, Alphonse
Epstein, Harry B.
Everett, William G.
Flaws, Robert, Jr.
Goerdes, William C. F.
Hardenbergh, Ab'm J. Jr.
Harrison, Oscar G.
Hassler, William C.
Heckel, Frederick C.
Hiltz, Louis F.
Howgate, Homer H.
Hubschmitt, John J.
Huntoon, Louis D.
Hynard, Eugene R
Ilse, Louis
Jennings, William E., Jr.
Jung, August C.
Katz, Gustave
Keller, Joseph F.
Kellner, Rudolph G.
Kocher, Louis J.
Kunz, Hugo
Lennon, James T.
Lovis, Henry C.
McCall, James
Moschcowitz, Joseph
Mueller, Edward A.
Mund, Adolph
Nolte, Henry W.
Orlich, William A.
Peiter, Frederick
Perry, Earl F.
Peterson, Lavinius W.
Pisani, Antonio
Power, Hearn J.
Preston, Henry K.
Ratner, Leo
Reeder, Arthur J.
Renton Joseph E.
Rice, Charles E., Jr.
Richtmyer, Frank W.
Robinson, Charles R.
Robinson, William J. M.
Rockey, Walter S.
Roese, Charles H.
Rosenblum, Leo
Ryan, John E.
Scanlan, James H.
Schroeder, William
Sheldon, Mowry
Shell, James L.
Sipperly, Norman H.
Small, Frank M.
Smith, Clarence I.
Smith, Clarence P.
Snow Nelson P.
Stafford, Andrew G.
Steeb Edward
Stelle, Abraham L.
Stewart, Charles C.
Stierle, Adolph, Jr.
Stuermer, Louis
Trostler, Joseph
Unbehaun, Louis H.
Vogt, Dietrich W.
Walp, H. W.
Walsh, Michael A.
Warth, Louis
Washburn, Le Roy
Woolston, Grant J.
Zeman, Isaac S.
Zoller, Albert P.

1891

Abrams, George Walton
Albert, Henry F.
Altheimer, Benjamin
Bancroft, Olin Francis
Becker, Oswald
Bischof, Albert Henry
Blasser, Philip
Boylan, James Joseph
Braecklein, Edward W.
Breen, Timothy B.
Britten, Cornelius
Brody, Morris
Browne, George A.
Bryant, I. Corwin, Jr.
Buck, Louis I.
Burkhart, William R.
Butler, J. Elmer
Cafferata, David
Congleton, Fred. I.
Cook, James J.
Copelin, John Logan
Dennin, Edwin Clinton
Dohrman, Augustus C.
Du Bois, Henry R.
Eichler, William
Fanning, Wilmot E.
Farrington, Frederick
Faulkner, Robert C.
Fielding, Edward F.
Fitzpatrick, T. George
Fowler, Samuel W.
Fraser, Walter J.
Friedlander, Arthur
Fritsch, Louis
Frueh, Gustav D.
Galpin, Harry T.
Geist, Augustus C.
George, Charles R.
Gieser, John J.
Goodman, Abraham L.
Groehl, Henry
Hart, Glentworth B.
Hertwig, William A.
Higgins, Thos. George
Hitchcock, Edgar T.
Hoffman, Gustav P.
Hollinger, Thomas H.
Holm, Otto P.
Horning, Louis P.
House, Jared Lansing
Huber, Charles
Johannes, Henry
Johnson, Winfield
Jones, George B.
Jorgensen, E. Bernard
Judson, George E
Kahrs, William H.
Kesseler, Anthony A.
Knape, Curt W.
Koch, George H.
Krueger, Max
Landon, Wm. Bradley
Lieberenz, Otto P. M.
Link, Joseph
Luff, J. Homer
Maring, Emil J.
Marx, Fr. Wm.
McKeown, E. W.
McNulty, Henry L.
Meytrott, John J.
Milhau, Edward John
Miller, Alfred
Miller, John F.
Monroe, Jas. Harrison
Monteser, Max
Moore, Frederick D.
Nabers, Frank E.
Nelson, Staurt W.
Nielson, John C. E.
Oatis, Charles P.
Oduber, Daniel Rosaure
Paddock, George G.
Phillips, Newton D.
Plate, Frederick H.
Pyne, John Benjamin
Ravich, Charles M.
Reed, Geo. William, Jr.
Reiske, Herman
Rice, Arthur J.
Ridley, James C.
Riley, Charles B.
Ripton, William
Salisbury, Orlando B.
Sayre James L. H.
Schaaf, William L.
Schaumann, George
Scherer, William F.
Schleimer, Abram
Schmitt, Martin Joseph
Sessions, Charles M.
Shipman, Harrie B.
Smith, Alfred K.
Spaeth, Louis A.
Stone, Edward F.
Tice, Herman A.
Timmermann, C. J. F.
Tobey, Frank W.
Townley, S. Bertram
Trites, L. Carl
Tuerke, Charles W.
Van Sickle, Albert M.
Vogt, Adam Charles
Wagner, James Cesaire
Warner, Helen Marguerite
Waterman, Ezra L.
Wells, Charles
White, James Francis
Williams, Simon E.
Wygant, Samuel

1892

Ambos, William
Arndt, Frederick J. P.
Arteaga, Angel M.
Bailey, James A.
Bartholomew H'y Smith
Beatty, John C.
Becker, Martin Frank
Beitman, Emanuel
Boettcher, Charles F.
Borggreve, Frederick
Breuer, Herman H.
Bruns, George
Burke, Edward M.
Carlisle, Franklin W.
Casazza, James P.
Casey, Herbert W.
Chamberlin, Albert E.
Cochran, Alex. Leo
Cohn, J. James
Constantin, Demosth'nesG
Crookshank, Fred. A.
Cusachs, P. Leon, Jr.
Davis, Leo
Delson, John
Denner, John C.
Doak, Joseph M.
Duble, Jesse Clyde
Eisentraeger, Emil
Eliscu, Frederick
Engelhardt, William C.
Feldmann, Max
Ferris, George W.
Ferry, Fairchild N.
Fischer, Henry J.
Fitz, Philip
Folckemer, S. Harper
French, Leon Howard
Frischbeir, Charles P.
Frohwein, Richard, Jr.
Godfrey, Thomas F.
Gordon, William S.
Gundlich, Charles
Hahn, August
Hall, Charles H.
Hegeman, Andrew E.
Hellstern, Rudolph F.
Herz, Pincus
Higinbotham, Arthur
Hitchcock, William R.
Hitsch, Charles
Hoefer, Ernest H.
Hoff, Alfred W.
Hurt, William F.
Judd, Daniel E.
Kiel, Nicholas P.
Kirk, James Trotter
Klein, Edwin G.
Knox, Edwin H.
Lehman, Alfred
Leyes, Charles J.
Lockwood, Sidney W.
Lowe, Francis A.
Lowerre, Eugene
McKane, Sadie E.
Makholm, Jeppe C. M.
Mayer (Jeresky) Max
Michaelian, Garabed
Millener, William S., Jr.
Muer, Henry F.
Noble, Frederick E.
Oats, Henry E.
Osseward, Cornelius
Pastor, Leonard J.
Petry, William
Pfister, Charles F.
Renn, Pius
Richart, William R.
Roberts, Charles W.
Roe, Robert A.
Roemer, John H.
Rolle, Arthur
Rottenberg Solomon
Salmon, Harrie G.
Sayre, Theodore B.
Schaub, Frederick W.
Scherick, Raphael
Schmidt, Hermann
Stephenson, John J.
Story, Frank R.
Tucker, Thomas H.
Tynan, Francis J.
Utley, William D.
Vosseler, Theodore L. M.
Wasserscheid, August A.
Wickes, Benjamin C.
Wilken, Willy
Williams, Frank B.
Wilzin, Isaac M.
Wolff, John A.
Woolley, Scudder J.
Worthington, Arthur
Yerdon, Charles F.
Zahn, P. E.

1893

Adams, George W.
Ambos, Louis
Bailey, Fred. M.
Baldwin, Robert J.
Berenson, Jacob
Bissell, Harvy Platt
Bohata, Emil S.
Bolduan, Charles F.
Brodil, Rudolph
Bunnell, George L.
Burton, Carey D.
Cannon, A. Bernard
Cannon, LeGrand B.
Carde, Lester Lawson
Carroll, Joseph P.
Champion, Edgar R.
Colonel James P.
Crispin, Francis E.
Cubit, Charles Thomas
Curtis, Charles Thayer
Eastland, Alfred Milton
Edlich, Theodore J.
England, William Albert
Farrer, John H.
France, William L., Jr.
Freess, Peter, Jr.
Frischbier, Otto G.
Gauss, Theodor C.
Granat, Selma
Grapotte, Frank A.
Greminger, William T.
Haigney, John J.
Heimerzheim, Charles F.
Heller, Harry
Heydemann, Otto
Hoburg, William A., Jr.
Hoerle, Charles J.
Hopkins, Ira Illo
Horni, John
Horsford, Frederick C
Hübel, John J.
Huber, Walter
Ihmels, Henry William
Jacobson, Louis
Jarchow, George W.
Johannsen, Otto
King, Marcus
Kinner, Herbert
Kipp, Allen H.

Kraemer, Alexander
Lange, Adolph H.
Lauffer, Gustav A.
Lawrence, Frederick M.
Lawrence, Ray G.
Lehmann, Emanuel
Lischke, Frank
Loeble, Joseph F.
Lohr, Eugene F.
Loughnan, Andrew J.
McCarthy, Joseph F.
Mathews, Charles L.
Mayer, Joseph F.
Meighan, Lawrence J.
Merker, George
Mills, Frank E.
Moessner, Charles W.
Munson, Will C.
Neer, David
Niblette, Frank A.
Novotny, William
Owsley, Henry Farrer
Paddock, Raymond B.
Perry, Fred. R.
Powers, John P.
Reusswig, Henry William
Ricksecker, John E.
Russell, Thomas A.
Sasse, Henry F.
Schaaf, Philip J.
Schanck, Charles E.
Schlichter, Charles H.
Schopfer, William H. C.
Schreiner, Berthold J.
Seelig, William
Siegmann, Joseph
Smith, Charles David
Specker, J. H. Richard
Spinetti, Juan Ma.
Stage, Floyd M.
Stage, Jacob S.
Stewart, Robert Gray
Strecker, Clarence
Stutzlen, Harry A.
Suydam, J. Howard
Tannenbaum, Julius
Taylor, John Curtiss
Terwilliger, Chauncey
Tiernan, Charles B.
Todd, Hanford C.
Twomey, Jeremiah H.
Uhle, J. Horton
Vroman, Charles A., Jr.
Webb, Eugene Corry
Wells, C. Otto
Westenfelter, Charles W.
Wilson, James
Wood, Howard L.
Wrensch, Henry E., Jr.
Young, Wickham W.
Zahn, William R.
Zwingli, Charles R

1894

Abbehusen, Gustav
Ankerson, Gustav H.
Anness, Harry Clinton
Auerbach, Max Arthur
Bastedo, W. Arthur
Benjamin, Mark DeW.
Bingham, James W.
Boehme, William
Born, Henry G.
Brater, August Wm.
Bresloff, August H.
Burger, Geo. Francis
Case, John Dumont
Chapman, Oscar B.
Clarke, William L.
Clinton, Wm. H., Jr.
Cohn, Samuel
Cook, Tunis F.
Cowen, Moses
Crooks, Harry W.
Culp, Brevard
Davies, Thomas M.
Davis, Albert E.
Dawson, B. Edgar
Drenckhahn, Fred. W.
Eely, Frank E.
Ehrgott, Peter J.
Eichler, Philip
Emory, Sarah S.
Erb, Ludwig G.
Faulkner, J. Stewart
Frankel, Meyor
Freid, Isadore
Froatz, John G.
Frölich, Geo. Carsten
Geisler, Leo W., Jr.
Gerard, William
Glogau, Conrad
Grube, Charles O.
Hall, George
Herbig, Frank J.
Herold, Hieronimus A.
Hills, Franklin G.
Hiltz, Fred. P.
Hintlian, Harootin K.
Holland, Geo. Frank
Horne, Albert
Hutchinson, John P.
Imhof, Emil
Johnson, Henry W.
Johnson, Geo. Lewis
Jordan, Ernest
Katz, Moses
Kaveny, James
Kay, Cornelius D.
Kealy, John J.
Keller, Frank J.
Ketterle, John, Jr.
Kirchner, Henry J.
Kirk, Nelson S.
Kirkpatrick, Wm., Jr.
Koennemann, Walter
Koretzky, Paul A.
Kreuder, Henry
Krumbholz, Felix
Kussy, Joseph
Lalley, Peter F.
Lauffer, Jacob J.
Lewis, Frederic T.
Linnig, Frederic W., Jr.
Loveland, Ernest K.
Luttmann, William O.
McCullough, F. Wesley
Mackiewicz, Julius
Marcus, Louis
Maring, Frank W.
Marx, Otto C.
Meisner, Carl A.
Miller, Charles
Molina, Anthony H.
Morris, Samuel
Mühl, Charles F. J.
Müller, Bernhard
Munk, Joseph T.
Murison, Robert F.
Myers, Eugene Watson
Neubert, Otto
Novarine, John
Phelps, George Floyd
Pond, Frank Nelson
Prior, Charles B.
Race, Clarence W.
Richter, Carl L.
Roberts, Charles Henry
Robinson, Abram
Ruzicka, Oscar J.
Sagar, George R.
Sargeant, Mortimer W.
Sauer, Ferdinand N.
Schaefer, Fred. C. A.
Schlichting, Emil A. T.
Schulze, Louis W.
Shaul, Ralph William
Siegrist, Peter
Siemann, Charles R.
Simrell, George W.
Skelly, James J., Jr.
Smith, Frank S.
Stiebling, Edwin G.
Stock, Frederick
Stoerzer, C. H. A., Jr.
Struck, F. Henry
Sullivan, Gray B.
Terhune, Harry
Tomlinson, George S.
Ullrich, Robert M.
Van Nuis, Charles L.
Van Tassell, Oscar I.
Wade, Louis B.
Walker, Alfred H. T.
Weiss, Abraham
Wilcox, Frank Lewis
Wilcox, John Paul
Williams, Benjamin F.
Wolff, Charles Theo.
Wood, Joseph R.
Wurthmann, J. Henry
Youngs, William C.

1895

Aquaro, Joseph
Bailey, Jesse I.
Bannon, Francis P.
Belfry, Ira E.
Bennet, Burton L.
Bjorkwall, Charles H.
Blackmore, Henry S.
Boenke, Rudolph
Bradner, Wm. N.
Broesler, Wm.
Brown, Daniel E.
Brown, Wm. D.
Brzezinski, Joseph
Burns, James E.
Carter, James B.
Chambers, Frank L.
Cherey, Louis I.
Christiansen, Ernst A.
Connolly, F. E.
Cooley, Herbert E.
Cordiner, Robert
Dauscha, Bruno E. R.
Davis, C. S. Woodhull
Dosh, Charley E.
Durr, George J., Jr.
Eckstein, Charles F.
Engle, Charles E.
Ferrer, Fermin
Ferguson, Harry B.
Fletcher, Fred. W.
Flick, Fred. L.
Foster, John B.
Gies, Rudolph
Gieschen, Albert H.
Gifford, Byron A.
Green, Alonzo P.
Greenlief, Frank M.
Greer, Wm. F., Jr.
Hall, William
Harding, Eugene W.
Hastorf, Harry
Heffley, Charles C.
Heffley, Thomas P.
Hensel, Otto
Hilliard, David G.
Hummel, Luther
Jorgensen, George H.
Kellogg, Alexander A.
Kellogg, J. Hollis
Kerr, Wm. M.
Killborn, Harry M.
Kirchein, Charles H.
Klipp, John F.
Knight, Wm. L.
Koehler, Albert
Koerber, Adolph J.
Koster, Wm. T.
Lavalaye, Joseph P.
Lurch, Albert D.
Mahony, Agnes P.
Manville, George E.
Meighan, Joseph P.
Merritt, Theodore A.
Meyer, Ernst
Morse, Franks S.
Mueller, August
Murray, Edward
Murray, John J.
Niederer, Christopher
Oats, George A.
Ogden, Frank T.
Ohlandt, Wm. M.
Owens, Wm. H.
Parker, John H.
Prote, Joseph C.
Raymond, Floyd C.
Reed, R. R.
Richter, Alexander A.
Roberts, Everett H.
Roeber, Charles H.
Rohne, Gustav
Ryan, James B.
Sawyer, Edward A.
Scharnikow, Louis G.
Schmelz, Herman
Schwallie, Charles E.
Sherman, Fred. B.
de Soto, Pedro
Steinach, Henry A.
Steinheuer, Henry G.
Strack, Gustav
Sur, Joseph C.
Sutorius, G. Ford
Trau, Frederick
Vanderbeek, S. L., Jr.
Volkmar, Henry W.
Walter, Herman
Weed, Edward P.
Wells, David M.
Wells, H. Radcliffe
White, Warren B.
Woell, John
Wrensch, Alexander E.
Young, John L.
Zeh, Frank B.

1896

Ackermann, Edward
Adams, Albert R.
Austin, William G.
Barnes, Harry Elmer
Barnes, Howard R.
Bear, Pierce B.
Becker, Joseph Charles
Bennett, Richard W.
Berger, Maurice M.
Block, John G.
Bormann, William F.
Branner, William S.
Brooks, Joseph J.
Brown, Henry
Bruguier, Oscar R.
Buckmaster, Frederic C.
Buell, Frank O.
Bulkley, Erastus W.
Butterworth, T. Edgar
Cannon, Harry D.
Cantwell, James Y.
Coats, Merton J.
Cosden, Alfred H.
Cowan, John B.
Darnstaedt, Rudolph L.
Deutschberger, Alex.
Dickson, James M.
Diehl, Theodore
Donahoe, John P.
Donnelly, H. Frank
Donzel, Bartholemy G
Drenckhahn, Louis A.
Drollinger, Adolph F.
DuBois, Louis
Eberhardt, Jr., John H.
Eckhard, Philipp L.
Egger, Frederick M.
Finley, Frank H.
Flesch, Berthold
Franck, Adam
Frank, Christian F.
Franz, Adam J.
Fulton, Frank
Garbarino, Louis
Gerken, Charles G. H.
Gies, Louis G.
Gillette, Lester C.
Glendenning, Harold
Glück, Max
Goldlust, Benjamin A.
Gould, Charles P.
Graham, Robert W.
Gregorius, Wm. P. L.
Hagen, Howard H.
Halpern, Louis N.
Hasler, Herman
Hayward, Frank W.
Herlihy, James A.
Hirschmann, Morris
Hoefling, Adolph C.
Hostmann, Jeannot
Hostomsky, Alois
Hoyt, Frederick A.
Hulick, Bloomfield
Hummel, George H.
Irvine, William D.
Isemann, William
Ives, Orrin F.
Jennings, Frank R.
Johanson, Frank L.
Klingmann, Albert

Kraft, Joseph M.
Landsman, Arthur A.
Lawall, Julie M.
LeClear, Thomas
Lockwood, Milton I.
Lotz, Louis A.
Lowe, Charles A.
McCoy, Guy H.
McCullough, James M.
McCully, Rob Roy
McGraw, William H.
McKenna, William H.
McLaughlin, John J.
Marscheider, Chas. E.
Massmann, Adolph G.
Meyer, Isaac
Miller, John G.
Morlath, William
Morris, Johnathan
Norcross, Grandin
Novak, John
O'Connor, Madge
Perilli, Francis S.
Pier, Victor S.
Pierce, Charles L.
Pierson, Joseph
Potter, Werden B.
Protzmann, Louis
Rakoff, Joseph
Rawlins, Clifton M.
Reynolds, Charles F.
Rezba, Emanuel C.
Ricksecker, Charles A.
Riegel, Adolph G.
Roediger, Joseph T.
Sackett, William L.
Salicrup, Robert J.
Scheidt, Harry J.
Scherding, John C.
Schnackenberg, Karl
Schweizer, Frederick P.
Seeker, Albert F.
Sheirs, William J.
Smith, C. Wesley
Smith, Chas. Wetmore
Smith, William W.
Stephens, C. Lewis
Teitelbaum, Benjamin
Theis, Adolf
Thielke, Paul O. L,
Thornhill, Sewell
Timmerman, Richard H.
Trowbridge, Frank W.
Uhe, Edward
Van Buskirk, Herbert C,
Van Stone, Theodore E.
Vincent, William C.
Vogel, Karl M.
Weber, George C.
Westheimer, David
Wiedemann, Henry
Zeiner, Eugene J.

N. Y. C. P. Cyclers.

THE century run of the N. Y. C. P. Cyclers will take place on Sunday, October 18th. The start being from the College at 7 A. M. The route is to Jamaica by train, then over the famous Merrick road to Patchogue. Capt. Erb has secured competent pace makers for the occasion, and weather permitting, it should be a grand affair. Medals to survivors will be distributed upon the payment of a small sum, the entrance fee tickets, which are for sale by Mr. Griffin, have been placed at fifty cents.

AN enjoyable run to Bergen Point, Guttenburg and Coney Island was held on the 20th. The participants being. J. G. Shaffer, S. Cohen, C. Stoerzer, Capt. Erb, J. Siegmann, L. Marcus and N. S. Kirk. The winners of the mile heats on the track were Cohen, 3.00; Kirk 3.03; Stoerzer 3.10.

MR. OTTO HENSEL, '95, who has been elected secretary-treasurer, will be glad to hear from any N. Y. C. P. To those desirous of joining, the dues for the balance of the season will be 25 cents.

THE next run will be to Tarrytown on Sunday, October 4th, start from College building at 1.45 P. M.

SCORCHER.

PRESIDENT SEARLES has appointed the following "Ball Committee:" H. A. Herold, chairman, Geo. F. Burger, Eugene F. Lohr, W. A. Hoburg, Jr. and Jeanot Hostmann. As yet nothing definite has been decided as to the time and place of the second annual ball.

Class Notes.

'93 NOTES.

THE fall and winter season of the Alumni is now opening, and unless all signs fail, this will be the most brilliant year in the history of the Association. Let us hope that it will be so, and that more '93 names will be seen on the records of our meetings and sociables, than have been heretofore.

GEORGE W. JARCHOW has sold his store in Yorkville, and has purchased Koellner's Pharmacy, on 2d avenue near 25th street. He is looking very prosperous and announces his engagement to Miss Koellner, daughter of the late proprietor of the store. May all joy and success follow him through life.

THE DISCOVERY OF ADONIS.

A JERSEY IDYLL.

The train sped onward, as did the same battalion of mosquitoes that had entered the car with me at Hackensack. The wild and beautiful scenery of the Jersey Flats passed before my enchanted eyes, like the panorama one reads about. Old fashioned hospitality seems to be the leading characteristic of the Jersey mosquito, for when I alighted from the train at Somerville, the battalion on the train was relieved by an army, who made it the pleasurable duty (to them) to escort me from the station.

The sun was distributing heat, in big, generous chumps, and a native who directed me through the town, volunteered the information that the farmers were feeding their chickens on cracked ice, to prevent them from laying hard boiled eggs. After I was nearly well done, I arrived at my objective point, and there in a paradise of dirty mortars and bottles, removing the remains of a batch of asafœtida pill mass from his fingers, I discovered, our, for three months lost, H. William Adonis Rensswig. He gave me the grip (also an odor) of the Ancient Order of Cranky Stamp Sellers, of which he is an Hon. Past Crank, and told me that business was hustling. After a few moments' conversation he told me that their colored porter was black-berrying, that is to a colored funeral, and that he had been unable to get away for dinner, but had satisfied his enormous appetite by gathering currents off the telephone wire. Two physicians and a bucket of water revived me after that, and I left for New York on the next train, a soured, cynical misanthropic being.

BROTHER SCHANCK says that if he ever drifts to New York, he will steer into every '93 man's place in the town. EUGENE F. LOHR.

'94 NOTES.

THE post-graduate course is to be graced by three of our brilliant lights this year. I refer to Messrs. Ruzicka, Geisler and Stoerzer.

JOSEPH KUSSY, of the editorial staff of the ALUMNI JOURNAL, and for sometime with O'Neil, of Newark, has severed his connections in order to pursue a medical course in the University of Pennsylvania. He has our best wishes, and I will endeavor from time to time to note his advancement.

"BILLY" DONOVAN, who will be remembered as one of the most popular '94 men, was found by Dauscha this summer. He has charge of the Loeser Pharmacy on Bloomfield avenue, Montclair, N. J. He had formerly been in a Vernon avenue store.

HARRY W. CROOKS spent his vacation at Plainfield and Asbury Park, N. J. Since returning to Newark he has purchased a very neat pharmacy at 272 Broad street, and is now giving close attention to business. All the boys will join us in wishing him every success

A. A. ZIEGLER has joined forces with his brother, in the latter's store on Linwood street and Belmont avenue, Brooklyn.

W. ARTHUR BASTEDO, of Caswell & Massey's is preparing for his second year at P. & S. During the summer he has been in the 47th street store.

FRANK N. POND, formerly of Lagat's, on Amsterdam avenue, has purchased a store on Ninth avenue and 24th street, this city.

HINTILIAN is with the International pharmacy on Sixth avenue.

LOVELAND is studying medicine at Yale.

DON'T forget the century run on the 18th.

N. S. K.

'95 NOTES.

E. W. HARDING, who is now with R. Bachman, at Wakefield, Neb., writes that "the receipt of the JOURNAL is the next thing to a visit among the boys."

MURRAY has left his position at 81 Catharine street, and has spent two weeks at New Haven, Conn.

HOEFFLING, who has been quite ill lately, has succeeded Durr, and is now with W. F. Krembs, 89th street and Madison avenue.

WRENSCH, of Montclair, expects to matriculate at the P. & S. College this fall.

CHAMBERS is with Klopsch, corner of Cumberland and Myrtle avenues, Brooklyn.

BROWN, the younger, was seen in front of Weidenfeld's, 106th street and Third avenue.

THE Heffly Brothers report good business in their store, corner of Nostrand avenue and Stockton street, Brooklyn.

OTTO HENSEL has been elected Secretary and Treasurer of the N. Y. C. P. Cyclers.

B. DAUSCHA, Ph. G.
234 E. 87th street.

'96 NOTES.

CANTWELL has returned to his home in Davenport, Ia., where he will open a store. He has the best wishes of his classmates

WM. F. BORMANN has accepted a position with Julius Goetze, Lexington avenue and 65th street.

JOSEPH RAKOFF is one of the apothecaries of Mount Sinai Hospital.

BERTHOLD FLESH will study medicine at Bellevue this fall.

HULICK wrote to me stating he had spent a pleasant summer at Asbury Park, where he is employed in the Mattison avenue pharmacy. He took frequent spins on his wheel in company with Bennett, who was with Hermon Atwood, at West End.

LOUIS LOTZ sent word that he was "wid me old man" at 599 Morris avenue, New York.

DROELINGER is another of the boys who is preparing for the Regents. He will try for an M. D.

PAUL THIELKE is with Tscheppe & Schurr, cor. 72d street and 3d avenue.

MORRIS HIRSCHMANN is with Miller Bros., 10th avenue and 48th street.

LECLEAR is still with Mr. Frazer on Fifth avenue.

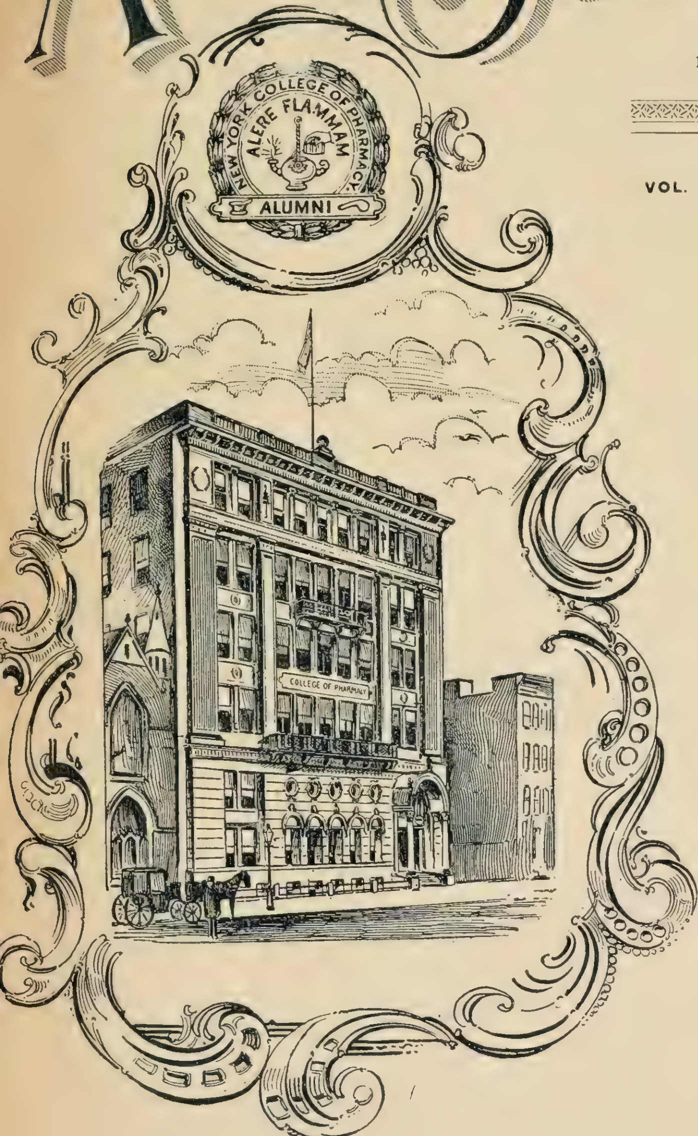
BRANNER, of Hoboken, N. J., who is an enthusiastic fisherman and often goes out for a day's sport, claims that he always brings home a load, but forgets to state whether it is a load of fish or something else.

SCHNACKENBERG, Thiekle, Hirschman, Seheidt and myself have been bowling quite frequently of late. As it is the intention to organize a team to challenge the teams of the Class of '97, and post-graduates, all who would like to participate will please correspond with the reporter.

JEANNOT HOSTMANN, Ph. G.

THE Alumni Journal

Entered at the New York Post Office as second class matter.



VOL. III. No. 11

November, 1896.

Contents:

THE RELATIONS OF THE COLLEGE MUSEUM TO THE PROPOSED ECONOMIC MUSEUM OF THE BOTANIC GARDEN - - - - - - 269
By Prof. H. H. RUSBY.
FORMALDEHYDE - - - - - 272
By Prof. VIRGIL COBLENTZ.
BOTANY AND MATERIA MEDICA - 274
By Prof. H. H. RUSBY.
EUGENOL IN MICROSCOPY - - 276
NORWAY, THE LAND OF THE MIDNIGHT SUN - - - - 277
A SOBER TALK ABOUT KOLA - 278
THE MANUFACTURE OF CHLORINE. 280
By DR. LUDWIG MOND, F. R. S.
THE RELATIONS BETWEEN PHARMACY AND SCIENCE IN GERMANY, - - - - - - - 283
MISCELLANEOUS NOTES, - - 286
EDITORIAL, - - - - - - - 287
IN MEMORIAM, - - - - - - 287
ALUMNI ASSOCIATION, - - 288
COLLEGE NOTES. - - - - 289
C. Y. C. P. CYCLERS, - - - 291
ALUMNI NOTES, - - - 291
CLASS NOTES—Post Graduate - - 291
" " Class '93, '94, - 292
" " Class '95, '96 - - 293
CONSTITUTION AND BY-LAWS OF THE ALUMNI ASSOCIATION - 294

PUBLISHED BY

THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY

. . . . OF THE CITY OF NEW YORK . .

THE SECOND ANNUAL BALL

TO BE HELD UNDER THE AUSPICES OF THE

ALUMNI ASSOCIATION

OF THE

College of Pharmacy of the City of New York,

To take place the latter part of January, 1897.

See ALUMNI JOURNAL for December for further particulars.

Oldest Stand on Broadway, N.Y.

Cable "Milhau." Telephone 3780 Cortlandt.

THE "ANIMAL EXTRACT CO.'S"

Heart Extract, for Heart troubles, Dropsy.
Brain do for Brain, Nerves, Hysteria, etc.
Medulla do for Epilepsy, Locomotor-Ataxia.
Ovaries do for Diseases of Women, Sterility, etc.
Testes do for Nervous Debility, Impairment, etc.
Thyroid do for Obesity, Goitre, Skin, etc.

Positively guaranteed as the only brand always strictly according to ***Dr. Hammond's*** published formulas. $100 forfeit if not.

J. MILHAU'S SON, Druggist,

183 Broadway, N. Y.

Mailed $1. Circulars Free.

Mention this Journal.

THE ORIGINAL ELIXIR; 1830.
MILHAU'S CALISAYA
HIGH TEST. TRUE BARK.

A reliable product, not mere alkaloids. Tonic, creates appetite. Dose, ʒ i,

VIN COCA,

MILHAU.

From assayed Bolivian Leaf; stronger than the imported. Doze, ʒ i.

MILHAU'S

CALISAYA · WITH · COCA.

Tones up Body and Brain. Dose, ʒ i.

MILHAU'S

CHALYBEATE CALISAYA.

An elixir, containing pyrophosphate of iron. Dose, ʒ i.

THE
Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. New York, November, 1896. No. 11.

THE RELATIONS OF THE COLLEGE MUSEUM TO THE PROPOSED ECONOMIC MUSEUM OF THE BOTANIC GARDEN.

By Prof. H. H. Rusby, M. D.

Professor of Physiology, Botanic and Materia Medica, New York College of Pharmacy.

LIBRAR
NEW Y
BOTANI
GARD

It is not a little surprising that so long a time should have elapsed without the establishment of a museum of economic vegetable products in a city where there is such a great trade in them as in New York, especially when we consider that this has been for generations one of the chief centres of botanical activity in the country. Such a want does not exist in any of the large commercial centres of Europe, nothwithstanding that the countries which they represent are very poor in vegetable resources, as compared with the countries of the new world. Even in our own country, New York is surpassed in this direction by the cities of Washington, Philadelphia, Boston, Chicago and St. Louis. The loss in educational influence thus entailed does not need pointing out. Those in a position to know appreciate that the commercial loss is not less. Samples of presumably valuable products are continually cast aside because their recipients have no means of knowing or of readily ascertaining their identity or valuable properties. The search for and investigation of new products is thus discouraged instead of being stimulated, as is the case in London, for example. Such samples are there taken to the Museum of the Pharmaceutical Society, or to the Economic Museum of the Kew Gardens and determined, their relations to other similar products ascertained and their own probable value estimated. The additions which have in this way been made to British trade are enormous. It is in fact for this very class of commercial objects that the government has supported her botanical gardens, which, enormously expensive as they have been, are considered as having more than paid for themselves in the aggregate.

The need of such a collection for reference and study in this city has been continually manifest, both in my own experience and in that of many others coming under my observation, and ever since my connection with the college it has been hoped that our museum could be made to a considerable extent to supply the deficiency. With this object in view, a great deal of time has been spent in collecting and obtaining by donation, exchange and purchase, the more important products of this class which have come within reach. As the collections have thus increased, they have overcrowded the available space, and it has become more and more apparent that to accumulate anything like a complete collection of strictly pharmaceutical products alone would tax our utmost resources of money and space, in our most prosperous times, and that it was out of the question for us to undertake anything in the way of a complete economic botanical musuem, except in the event of our becoming the executors of an endowment fund devoted to this special purpose.

The realization of our hopes for a botanic garden in this city, and the intelligence of a direction which has planned it on a scale broad enough to embrace all the natural departments of the subject, have happily removed all doubts as to our future possession of such a musuem as we need. The plans for the economic museum of the garden are already formulated. They include all the best features of such institutions and on a scale commensurate with the extent of the interests represented. The medical and pharmaceutical interests have been well considered, and the relations of the museum of the College of Pharmacy regarded as an important element in the situation. Our museum is recognized as occupying the position of authority in pharmaceutical matters, and it is recognized that its development must continue. At the same time, it is not desirable that much duplication should be practiced, certainly not for many years, while the foundations of the Garden-museum are being laid. In other words, the Garden-museum, to strengthen and complete its usefulness, needs the benefit of the materials in the College-museum, yet it is not desirable to duplicate them. The college has continuous need of materials to be found in the Garden-museum and in the living collections of the Garden, but which are not to be strictly regarded as pertaining to the class for the accumulation of which alone we can make provision. This is a condition calling specifically for a reciprocity arrangement, and the question of how the two institutions can best aid one another is one that must very shortly come before both of them for consideration. There is no better place than THE ALUMNI JOURNAL in which the matter can be discussed in advance of such official consideration.

We have a parallel case in the collections of the American Museum of Natural History, especially in its Jessup Wood collection. The Garden-museum will provide for a universal collection of tree trunks, or at least of the useful species. The Jessup collection is a complete collection of trunks of North American trees. It is not desirable that the Garden should duplicate these, the requirements in the way of money and space being great. It is therefore proposed that the Garden catalogue of trunks should include those of the Jessup collection by means of cross references, their location in the American Museum being indicated in connection with their name in the catalogue.

In carrying out a reciprocity arrangement between ourselves and the Garden, it will be necessary for some such an arrangement as this to be effected and a division of the exhibits into two appropriate classes is called for.

Since a single line of representation is about all that can be provided for in the College-museum, there would appear to be no question that this line should be Pharmacognosy, assuming that the subject should include all chemical and pharmaceutical products of the drugs. If such a museum possesses any definate function, it would seem to be the settling of all commercial questions that may arise concerning strictly pharmaceutical articles. All those articles which are included by way of association merely might be better left to the Garden-museum, as well as all pharmaceutical curiosities and unapplied novelties. A few illustrations will suffice. Belladonna, being an important botanical exhibit, from general considerations, would doubtless find a place in the Garden-museum, the entire plant being represented. But its representation there would be upon a botanical basis. It would represent the plant, the individual, the source from which the product was to be derived, and perhaps in a general way the product itself. The office of the College-museum upon other hand should be to represent the commercial aspects of belladonna, the botanical features being secondary. That museum should contain a full suite of specimens representing the drug in its trade aspects. A specimen of first quality of root and leaves should be shown beside others representing the drug as a woody, wormy, fermented, badly preserved and sea-damaged article, all of these samples to be drawn from lots actually observed in commerce. In the same way all adulterants, substitutes and related products should be shown, as well as all the alkaloids and by-products obtained in manufacturing, and which form articles of trade. The Garden-museum again might contain a map showing the natural distribution of the plant and any special apparatus employed in the manufacture of its products. It is quite true that the last-named exhibit is of pharmaceutical interest, but provision could not be made in our museum for objects of this class. The Garden catalogue would include and number all these exhibits of the Coilege-museum and credit them thereto. Eventually the College-museum also will have its written, or perhaps printed catalogue, and this, by a similar plan of cross-reference, should include the related exhibits of the Garden-museum. The value of these cross-references in indicating to a student working in one of the museums the possibility of obtaining further information, on related details, is apparent enough.

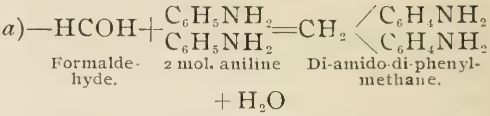
At the same time that each institution is thus indexing the exhibits of the other they should be rendering mutual aid in the accumulation of them. In the course of its collecting operations each will be continually obtaining material applicable to the collections of the other, and a regular system of transfer should be established.

The advantage of an early discussion and settlement of these questions is apparent, when we consider that the present facilities of the College-museum are overtaxed. We have hundreds of specimens in hand for which we have neither containers nor case room. At the same time there has already been placed upon the shelves a considerable number (though it is true a much smaller number than of the class last referred to) of specimens which we can much better spare and which may very profitably give way to others. It would appear to be a wise policy on the part of the College to transfer this material to the Garden-museum as soon as that institution is ready to receive it.

FORMALDEHYDE.

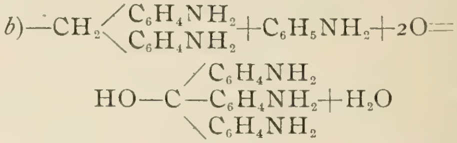
By Professor Virgil Coblentz.

The chemistry and pharmacy of formaldehyde form the subject of an interesting article by Dr. Altschul in the *Pharmaceutische Centralhalle* from which the following is abstracted. Formaldehyde was first prepared by A. W. Hofmann in 1867, in which the mixed vapor of methyl alcohol and air was passed over a glowing platinum spiral, this was later replaced by copper, and the vapors were passed into water, whereby moderately concentrated solutions were obtained. Grossmann, upon the addition of an alkali bisulphite, precipitated formaldehyde as a double salt (formaldehyde acid sulphite of the alkali), the reducing properties of which served as a photographic developer. Owing to the varied applications of formaldehyde in the manufacture of organic chemicals and colors, various manufacturers sought for a more economical method of preparation. In 1890, Trillet a French chemist patented a process in which large quantities of vaporized methyl alcohol mixed with air were drawn by suction through large copper pipes, which contained either coke, charcoal or any porous material in glowing condition. This brought about the oxidation of the methyl alcohol to formaldehyde, the vapors of which were caused to pass into water where they were absorbed. This process slightly modified, has been patented in various countries. Among the important syntheses in which formaldehyde is employed in the coal tar industries, the following may be cited; with one molecule of formaldehyde and two molecules of an aromatic base, di-amido-di-phenyl-methane derivatives are formed, which with a third molecule of a base, on oxidation, are condensed to tri-phenyl-methane derivatives which form the basis of many classes of aniline colors. This may be illustrated by the formation of para-rosaniline from aniline and formaldehyde:



$$a)\text{—}HCOH+\begin{array}{l}C_6H_5NH_2\\C_6H_5NH_2\end{array}=CH_2\begin{array}{l}\diagup C_6H_4NH_2\\ \diagdown C_6H_4NH_2\end{array}+H_2O$$

Formaldehyde. 2 mol. aniline Di-amido-di-phenyl-methane.

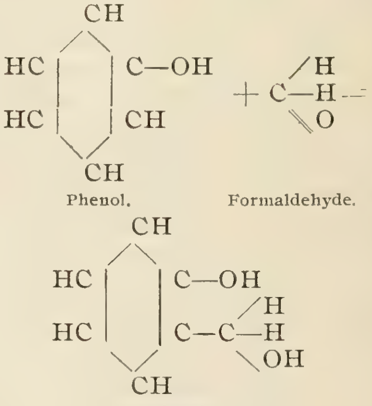


$$b)\text{—}CH_2\begin{array}{l}\diagup C_6H_4NH_2\\ \diagdown C_6H_4NH_2\end{array}+C_6H_5NH_2+2O=HO\text{—}C\begin{array}{l}\diagup C_6H_4NH_2\\ \text{—}C_6H_4NH_2\\ \diagdown C_6H_4NH_2\end{array}+H_2O$$

p-rosaniline base.

If toluidin ($C_6H_4NH_2CH_3$), the next higher homologue of aniline be employed in reaction *b* in place of aniline, the fuchsine bases are obtained. The application of formaldehyde has been extended to various other branches of the color industry. In the manufacture of synthetic coal tar products, we find among its various applications, the action of formaldehyde on phenol, whereby saligenin (a decomposition product of salicin), is obtained, which has lately been introduced as a remedy for rheumatism.

Thus:—



Phenol. Formaldehyde.

Saligenin.

By interaction between gallic acid and formaldehyde, Caro obtained methylene-di-gallic acid, the bismuth salt of which, has been introduced by Mess. Merck, under the title of Bismal, an intestinal astringent. If in the above, tannic acid be substituted for gallic acid, Tannoform is obtained.

A simple derivative of formaldehyde is the hexa-methylene-teltamine, obtained from formaldehyde and ammonia—$6CH_2O+4NH_3=(CH_2)_6N_4+6H_2O$, known commercially as urotropin and formin, being used as diuretics and uric acid solvents. Formalin has been successfully applied in the removal of the odor of iodoform; in this case, a compound of it and the latter was obtained which is almost devoid of odor. This body, known under the name of "iodoformin," should not be confounded with one of similar title obtained by the action of iodo-potassium-iodide on hexa-methylene-teltamine, the former being colorless, while the latter is of a reddish color. Again by the action of hydrochloric acid on an aqueous solution of formaldehyde an additious product, chlor-methyl-alcohol $(CH_2\begin{smallmatrix}/OH)\\ \backslash CL)\end{smallmatrix}$ is obtained. If two molecules of formaldehyde unite with one of hydrochloric acid, oxy-chlor-methyl ether $(O\begin{smallmatrix}/CH_2CL)\\ \backslash CH_2OH)\end{smallmatrix}$ is obtained. Both of these compounds readily exchange their chlorine atoms for a hydrogen of various amido groups or hydroxyls thus leading to synthetic preparations.

An important characteristic possessed by formaldehyde is its action on the gelatines (being similar to that of a tannin) forming elastic, translucent masses, insoluble in water, these form excellent emulsion films for photographic purposes which can be kept in any climate. These films can be readily hardened and are called gelatoid paper.

Formaldehyde appears in trade chiefly in 40 per cent. solution, under the titles of either Formal or Formalin. Lamps are sold which contain methyl alcohol and when ignited give off formaldehyde. A less important rolé is played by solid formaldehyde which results from polymerization of the gas being known scientifically as "tri-oxy-methylene," technically as "paraform" and "triformol." It must be borne in mind that formaldehyde exists in three modifications, the gaseous (CH_2O) which is stable in diluted cold aqueous solution, by means of a very low temperature it has been condensed to a liquid. On heating gaseous formaldehyde it is converted into para-formaldehyde, which, in more concentrated condition, separates as a white floceulent mass. On evaporating a solution of formaldehyde, a residue of trioxymethylene remains behind; this constitutes a white insoluble mass, which, on contact with water, is decomposed into formaldehyde.

Commercially, formaldehyde is most largely employed as an antiseptic, antiferment and preservative agent. In vaporized condition or aqueous solution it is destructive to bacterial life of all kinds. As sterilizing agent for culture fluids it excells corrosive sublimate. Where a rapid acting disinfectant is desired, such as chlorine, sulphurous acid or phenol, formalin does not answer so well, as its action is somewhat slower than the above; however, it is peculiarly adapted for disinfecting bedding, clothing and such fabrics that are liable to be injured by such agents as chlorine, sulphurous acid, superheated steam, etc. In such cases the disinfection is best carried out by means of the formaldehyde lamp, 320 gm. of methyl alcohol will yield sufficient a ldehyde vapor to destroy all forms of bacteria in a room of 28 cubic metres capacity in 24 hours. A specially constructed formaldehyde lamp is that of Barthel, which is so arranged that the vapors of the aldehyde are mixed with air as rapidly as they are generated, which is necessary, for otherwise polmerization takes place, yielding inert products.

Another method of application for formaldehyde is the formaldehyde-gelatine which is employed in the powder form as an antiseptic in surgery. Formaldehyde is being constantly given off by this compound when in contact with an open wound, acting as an antiseptic and facilitating the healing process.

The sterilizing action of formaldehyde has led to its application to the preservation of food products. In 1892 Trillet, a French chemist, patented its use in this particular. He stated that a meat extract with the addition of $\frac{1}{25000}$ part of formaldehyde, can be indefinitely preserved. It has been recommended to chemists as an addition to milk which cannot be subjected to analysis at once. Serious objections have been made since this time against its use as a food preservative.

Formalin in 4 per cent. (aldehyde) solution, is a valuable agent for preserving and hardening anatomical specimens, there being no shrinkage; it can also be employed for preparing microscopical sections of animal as well as vegetable tissues. The specimens of animal tissues retaining their original color in every case, while vegetable preparations show no change in their chlorophyl.

Among the various tests for formaldehyde we have:

1. Ammoniacal silver nitrate solution is at once reduced.

2. Fuchsine sulphurous acid is reddened.

3. Very dilute aqueous solutions of aniline give a white precipitate of formaldehyde-aniline.

4. A solution of a hydroxylamine salt when boiled with formaldehyde yields an oxime ($CH_2{=}NOH$) which, when further heated, yields hydrocyanic acid—known by its odor.

5. Addition of bromine water to an ammoniacal solution of formaldehyde gives rise to a white precipitate of hexamethylene-teltamine-bromide.

For quantitative estimation Klar recommends the following; In a flask of 250 cc. capacity (glass stoppered), 60 cc. of $\frac{N}{1}$ ammonia solution, and 5 cc. of the formaldehyde are shaken together and set aside for three to four hours: again shake, to cause absorbtion of all gaseous ammonia, add quickly, 20 cc. of $\frac{N}{1}$ hydrochloric acid and water sufficient to make up to 250 cc. In 25 cc. of this sample the excess of normal acid is estimated by titrating back with normal sodium hydrate solution, using rosolic as indicator, six molecules of formaldehyde uniting with 4 molecules of ammonia.

BOTANY AND MATERIA MEDICA.

By Prof. H. H. Rusby.

The Herbarium of the New York College of Pharmacy

Mr. P. A. Rydberg makes numerous acknowledgements in his monograph upon the North American species of Physalis and related geneca for assistance derived from our college herbarium. Of two of the new species described, one exists in but two, the other in but three, other collections in the country.

Among several new species of Saxifraga described by Mr. J. K. Small in the current number of the *Bulletin of the Torry Botanical Club*, one is based upon a specimen seen only in this herbarium. Several other monographs now in course of preparation in this country and Europe have also drawn freely for information upon the same source.

REVIEWS.

The North American Species of Physalis and Related Genera. By Per Axel Rydberg, *Memoirs of the Torrey Botanical Club*, IV. 5. pp. 76, with index.

All our readers are probably familiar with the little plant known as "Ground Cherry" and "Ground Apple," and the delicious fruit which it yields; but none of them are aware that we have in North America at least 39 species of them. The fact that the genus is here so largely represented is for the first time made known by Mr. Rydberg, who, besides establishing several doubtful species, has described no less than eight new ones. The more important part of his work however is the correction of wrong names, the arrangement of the synonomy and the publication of adequate descriptions of each species and variety. The group has always been regarded as a difficult one, and the tangle ot synomony disclosed by Mr. Rydberg fully justifies the belief. With such a complete work at hand there can be no further excuse for wrong determinations.

For the Northern *Physalis grandiflora* Hooker, Mr. Rydberg founds the new genus Leucophysalis.

Two new species of Chamaesaracha and one Margaranthus, are also described.

The Agricultural Ledger, published by the Government of British India, and edited by Dr. George Watt, the Government Reporter on Economic Products, is not so well-known in this country as it deserves to be, especially in our Southern districts. It is very closely related in its general direction and management to the Dictionary of the Economic Products of India, the greatest work of its kind in existence, and the author of which is the editor of the *Ledger*. The numbers of the *Ledger* are issued from time to time as subjects of interest come to hand. The position of each of these subjects in the *Dictionary* is indicated, and reference to literature bearing upon it are printed upon the title page. All departments of Agricultural Science and Art are represented, and there are many numbers devoted to botanical subjects. Some of these subjects are here enumerated and points of interest extended. No. 1 (1892), Indian Fodders; No. 3 (1892), Potato Preservation; No. 4 (1893) Potato Diseases; No. 5 (1893), Vine Diseases; No. 6 (1893), Kinds of Sugar which may be classed as Refined; No. 15 (1893), *Arachis hypogæa* (The Pea-nut); No. 18 (1893) and No. 5 (1894); Lucerne Cultivation; No. 4 (1894) How to Collect, Catalogue and Preserve Botanical and Economic Specimens; No. 6 (1894), Rhea Fiber; No. 7 (1894), Assimilation of Nitrogen through the Agency of the Root-tubercles of certain Papilionaceæ; No. 17 (1894), Castor-Oils; No. 18 (1894), *Agave Americana* (The Century Plant), No. 20 (1894) The Palmyra Palm, No. 1 (1895), *Acacia Catechu*; No. 2 (1895), Indian Coals; No. 9 (1895), The Al Dye (Morinda); No. 13 (1895), Sugar Cane and Sugar; No. 20 (1895), Indian Fungi; No. 5 (1896), Camphor Leaf Oil; No. 6 (1896), *Abroma Augusta*, *Hibiscus Abelmoschus* and *Malachra Capitata;* No. 7 (1896) *Polygonum cuspidatum.*

The composition and nutritious values of the principal South Indian Fodders are displayed in tabular form.

A pernicious agent in the production of potato-disease in India is Phytophthora infestens De Bary. Dr. Watt gives an account of its life history.

It is pointed out that as the use of charcoal strainers is unknown in the refining of Indian sugars, they are to be regarded as refined if freed from admixture of uncrystallized syrup.

It is noted that in Bengal, large numbers of red ants congregate about the Pea-nut plants and make the soil feriable, facilitating the burying of its ovaries. It is assumed that the plant attracts these ants in some way for the purpose. It is estimated that 112,000 acres are devoted to the cultivation of this plant in India. The exports in 1893-94 were 76,895 tons. Distinct varieties are not known, but several distinct forms are recognizable in cultivation. The crop matures in six months from seed, and the average yield is 50 bushels per acre, without irrigation, and nearly 100 bushels with irrigation. They being 19 to 22 rupees per 529 lbs. of kernels, at the point of production.

A history of the attempts to produce Rhea fiber (Ramie or China-Grass. —*Bœhmeria nivea* and *B. tenacissima*) in India in competition with China, is given. The various partial awards paid by the government under its offer of £5000 for a fibre-making machine meeting certain requirements, and the subsequent withdrawal of the offer in the belief that a successful result could not be obtained, are reviewed.

No. 17 (1894) gives the results of the examination of 23 samples of castor-oil, out of 78 exhibited at the Imperial Institute. The oil from the coast-grown seeds is maintained in commerce as a distinct article from that from inland-grown seeds.

The Palmyra Palm is identified as *Borassus flabelliformis* L. Its geographical distribution and domestic uses are discussed. Like many other palms it is very useful. Toddy is made from the sap obtained by cutting off the young flower-stalks. The soft, transparent, jelly-like contents of the young seed are eaten. The young seedlings are eaten like asparagus. The leaves are used for thatching and are almost the only fuel in some sections. A valuable timber is obtained from the trunks. The outer portions are very hard, and are not attacked by the white ants. The soft-heart being dug out, excellent buckets are made from the lower trunk sections. The leaf-stalk yields a fibre valuable for ropes, brushes and other purposes.

The number on Indian Fungi deals with the literature of certain ruinous blights to which Indian crops are subject, and is based chiefly on the researches of the well-known and energetic mycologist, the late Surgeon-Major A. Barclay, M. B., F. L. S.

The number devoted to Camphor-leaf Oil is a reprint of the paper by Prof. David Hooper in the *Pharmaceutical Journal and Transactions*, which has become already well-known in pharmaceutical circles.

The plants treated in Ledger, No. 6 (1896), are valuable as fiber-yielders, and the value of their respective fibers is discussed.

The bark of the root of *Polygonum cuspidatum* was found to contain *polygonin*, a glucoside yielding *emodin*, *emodin monomethyl ether* and a wax identical with that occuring in the root-bark of *Morinda umbellaota*.

The numbers referring to *Al Dye*, *Acacia catechu* and the *Collection*, *Cataloguing and Preservation of Specimens* are of so much interest and importance, that they are deemed worthy of more extended reviews in future numbers of the ALUMNI JOURNAL.

EUGENOL IN MICROSCOPY.

Eugenol has recently been suggested by Oppemann (*Apotheker Zeitung*, *1896*, *53*.) as an excellent expedient for increasing the transparency of vegetable objects for microscopical examination, especially for powdered drugs. In place of water or glycerin, eugenol is proposed for imbedding the vegetable sections or powders. It is said to impart superior transparency to all vegetable tissues and cells. It may also be used in cases where staining of the objects is required or preferable. In the case of objects of much resistance to penetrating fluids, this will readily be overcome by diluting the eugenol with some ether before using.

The specific gravity of pure eugenol is 1.072 at 15° C., its boiling point x 253° to 254° C. (mercurial column entirely in the vapor) and it gives a clear solution with a 2 to 1 per cent. solution of potassium hydrate.

NORWAY, THE LAND OF THE MIDNIGHT SUN.

The first Alumni lecture of the season was delivered in the ampitheatre of the College, on Wednesday evening, October 14th by Col. Herman Henneberger, on Norway, the "Land of the Midnight Sun."

About three hundred of the members of the Association with their friends including several ladies, were highly interested by a most instructive and realistic description of the trip which Col. Henneberger and his wife made to Norway. Mrs. Henneberger had charge of the stereopticon, and during the hour and a half occupied in the delivery of the lecture, threw illustrations upon the screen almost continuously. The applause which greeted many of these pictures testified the appreciation of the beauty and perfection of the illustrations, even by so critical and experienced an audience.

After a brief introduction the audience were, in imagination, put on board an Atlantic liner, crossed the ocean accompanied by some of its unpleasant experiences, as well as its pleasures, and finally found themselves sailing up the Christiania Fyord, where, from the deck of the little steamer, they saw the snow-capped mountains on either side. Landing at Christiania, the Capitol of Norway, the main street, "Karl Johans Gade," was shown with the King's palace in the distance.

Leaving Christiania by one of the most beautiful roads, an avenue of firs, the travel was continued either in Carnole, Stoklkarre or Landau by the posting system, the system being an arrangement between the farmers and the government to furnish travelers with conveyances. In this way the journey is continued to the waters of the Hardanger Fyord, climbing to great heights, and for days passing over the table lands or Fyelds where mountains soar still higher, and verdure and human habitations are very rare. When you meet the peasantry you find them the most hospitable in the world; you partake of their humble food, and rest by night in homely lodgings. An illustrated description of the farmhouses was given, showing the bright, open fire-places and simple furniture.

The method of drying hay is to hang it on wire or racks made of twigs in order to get the greatest sun exposure—the ground is so damp the hay has to be hung up. Odde, which lies in the Hardanger Fyorde, is finally reached, the various cataracts and the Buarbrae glacier visited. The costumes of the people, married and single, and the bridal dress with the wedding ceremony were described. Bergen, the home of the Vikings, with its fish market was then reached. Leaving Bergen by railway to Vossvangen, the travelers climb, by several stages, to the summit of the pass that leads over the mountains to Gudvongen, resting on a little plateau called Stallheim, one of the most celebrated and impressive spots in Norway, looking down upon "Naerodal," one of the most exquisite valleys in the world.

Continuing the journey you arrive at Haeg, and visit the old church of Borgund, a most fantastic edifice, built in the twelfth century. The illustration of a farmer's wife rolling out her "flad brod,', bread made from unfermented dough o barley and oatmeal sometimes mixed with pea flour which gives it the greenish color. This dough is rolled into large circular loaves, having a diameter of two or three feet and the thickness of pasteboard, and it will keep an indefinite time.

Returning to the beautiful sunny Fyord the steamer stops at "Balholmen" where the court of King Bele is, and here also is laid the Norwegian scene in Edna Lyal's "The Hardy Norseman," the landlord of the hotel, "Knut Kukue," being one of the characters in the story.

Passing through the Geiranger Fyord where the mountains are fully 5000 feet high, there are hundreds of cascades from a single point of view, also the series of falls called the seven sisters. Sailing northward and crossing overland to the waters of the Molde Fyord. Molde is reached, the first real village since leaving Bergen. Leaving Molde, the traveler drives through the famous Romsdal, where the wonderful mountains called the Witches' Pinnacles and the Romsdalhorn are seen. From this they sail to the ancient city of Trondhyem. Here a picture of the market square was shown, with the store of an Apotheke in the foreground. Trondhyem is the real starting point for the North Cape, and the journey takes about eight days. Leaving Trondhyem, the voyager skirts the coast amid wild scenery, visits the famous island of Torghaiten (the hat), and finally crosses the Arctic Circle entering the Raftsund Fyord, passing the Lofoden Islands, where the great fishing industry of Norway is carried on, they reach Tromso where they visit a Laplanders' encampment. Leaving Tromso and continuing to skirt the coast for about seventy-five miles, they visit a whaling station, and finally reach Hammerfest the most northern town in the world. Leaving Hammerfest and passing eastward through the Mager's Sound, they arrive at the base of the famous "Bird Rock." The ship's cannon is fired and instantly millions of birds fly forth screaming ; so thick are they that the sky is fairly darkened. Leaving Bird Rock the voyage is continued until the vessel is anchored at the base of the North Cape, the very end of Europe. The passengers climb the cape, and await the hour of midnight, and at that hour, amid a death-like stillness that is apalling, the gun of the ship a thousand feet below is heard, and lo! they behold—

The Midnight Sun.

A SOBER TALK ABOUT KOLA—WHAT THE LATEST RESEARCHES DEMONSTRATE.

It is incontestable that kola has not entirely fulfilled all the claims that have been made on its behalf as a heart, nerve and muscle stimulant. Introduced with rather florid statements of the wonders which it accomplishes among the African denizens of this habitat, and the capacity for endurance and exertion which it imparts, investigators in Europe and America have found that, apart from its utility as an invigorant in convalescence and nervous debility, it performs no prodigies and works no wonders. It is a good serviceable stimulant, and is widely prescribed. But it is no therapeutic thaumaturgist.

In this respect the drng has fared very much as has coca. Coca is supposed to be not only the solace and comfort, but the magical restorative and conjurer of fatigue, among the natives of Peru, Chili, and Bolivia. It strengthens their limbs and girds their loins with preterhuman power. It is food, drink and stimulant combined. Carefully, exhaustively tested in America, coca yields no such results. It, too, is serviceable as a tonic or stimulant, but it has wrought nothing miraculous. Nor will it do to attribute the mediocre results to the use of the dried leaf, deteriorated by long storage and transportation. Preparation of fresh cocoa leaves have been manufactured in South America and exported into the United States. And the result? Very much the same as that achieved with preparations of dried coca—serviceable, but not at all remarkable, save in those high-strung, imaginative patients whose prompt reaction to stimulants savors more of suggestion than medication.

The disappointment which in some instances has followed the administration of kola—the absence of marvelous results in all—have likewise been temporarily explained away by asserting the great superiorty of the fresh kola nut and its pharmaceutical preparations; the assumed deterioration of the dried nut; the presence in fresh kola of a potent glucoside kolanin which on drying partially decomposes into caffeine, theobromine and tannins; the superiority of the glucoside as compared with caffeine pure and simple.

These assertions are gratuitous. They are based, first, on wrong chemistry, and second, on wrong therapy. Clinical reports by the thousand attest, not the marvels, but the utility and benefit of the preparations of dried kola; and, to our own knowledge, no careful physiological or clinical comparison of the "fresh" and the "dried" has ever been made. Yet nothing short of such a comparison will justify sweeping clinical conclusions. With respect to the chemistry of kola, we can profitably ponder the results obtained by Professor Prescott and his pupil, James W. T. Knox, as reported in their admirable paper on the "Caffeine Compound in Kola," presented to the A. Ph. A. at Montreal. Messrs. Prescott and Knox make clear:

1. "There is much evidence tending to show that *this so-called glucoside is in reality a mixture of tannates of caffeine and theobromine.*"

2. The alleged "glucoside"—in reality the caffeine compound of kola—is decomposed, with liberation of free caffeine, not only during the process of drying the nuts, but also whenever it is exposed to the action of *heat or moisture.*

3. As far as reactions and physical properties are concerned, barring a slight disparity of elementary composition, no radical difference has been found between the natural and the artificial products, or in other words, between the natural caffeine compound hitherto represented as the glucoside kolanin, and the artificially prepared kola-tannate of caffeine.

4. One-half of the total alkaloids in dry kola exist in combination; in the fresh seeds (carefully guarded from moisture), more than sixty per cent. of the alkaloids are combined. "It should also be noted that, so far as the yield of alkaloids is concerned, the *moldy kola does not differ from that in perfect preservation.*"

Now, since the alleged glucoside is decomposed by heat and *moisture*, what possible advantage can a pharmaceutical preparation of the fresh nuts enjoy over a similar product of the dry nuts?

Since the difference between fresh and dry kola, with respect to the proportion of combined alkaloids, is at the outset only a little over ten per cent., and this difference is *totally nullified* by decomposition from moisture during manufacture, is it not manifestly and palpably erroneous to declare the preparations of fresh kola superior to products of dry kola while ascribing the stimulant action to a glucoside which is in reality only a decomposed compound of tannates and caffeine?

If in addition to the researches of Prescott and Knox, further testimony be required, we have it available in the article published by Dr. Karl Dieterich of the Helfenberg labratory, in the *Pharmaceutische Centralhalle* of August 20, 1896, "On the Constituents of Fresh, Dried and Roasted Kola Nuts." Using the method of Jules Dean, Dieterich was unable to find more than insignificant proportions of so-called "kolanin" in the fresh, dried or roasted fruits. He declares emphatically that the dried kola nuts afford the most active material.—*Bulletin of Pharmacy.*

If you have not already subscribed to the ALUMINI JOURNAL, do so at once It will pay you.

THE MANUFACTURE OF CHLORINE.*

By Dr. LUDWIG MOND, F.R.S.

The early history of chlorine is particularly interesting, as it played a most important *rôle* in the development of chemical theories. There can be no doubt that the Arabian alchemist Geber, who lived eleven hundred years ago, must have known that "Aqua Regia," which he prepared by distilling a mixture of salt, nitre, and vitrol, gave off, on heating, very corrosive, evil-smelling, greenish-yellow fumes, and all his followers throughout a thousand years must have been more or less molested by these fumes whenever they used Aqua Regia, the one solvent of the gold they attempted so persistently to produce.

But it was not until 1774 that the great Swedish chemist Scheele succeeded in establishing the character of these fumes. He discovered that on heating manganese with muriatic acid he obtained fumes very similar to those given off by "Aqua Regia," and found that these fumes constituted a permanent gas of yellowish-green color, very pungent odor, very corrosive, very irritating to the respiratory organs, and which had the power of destroying organic coloring matters.

According to the views prevalent at the time, Scheele considered that the manganese had removed phlogiston from the muriatic acid, and he consequently called the gas dephlogisticaced muriatic acid.

When, during the next decade, Lavoisier successfully attacked, and after a memorable struggle completely upset the phlogiston theory, and laid the foundations of our modern chemistry, Berthollet, the eminent "father" of physical chemistry—the science of to-day—endeavored to determine the place of Scheele's gas in the new theory. Lavoisier was of opinion that all acids, including muriatic acid, contain oxygen. Berthollet found that a solution of Scheele's gas in water, when exposed to the sunlight, gives off oxygen and leaves behind muriatic acid. He considered this as proof that this gas consists of muriatic acid and oxygen, and called it oxygenated muriatic acid.

In the year 1587 Berthollet conceived the idea of utilizing the color-destroying powers of this gas for bleaching purposes. He prepared the gas by heating a mixture of salt, manganese and vitrol. He used a solution of the gas in water for bleaching, and subsequently discovered that the product obtained by absorbing the gas in a solution of caustic potash possessed great advantages in practice.

This solution was prepared as early as 1789, at the chemical works on the Quai de Javelle, in Paris, and is still made and used there under the name of "Eau de Javelle."

James Watt, whose great mind was not entirely taken up with that greatest of all inventions—his steam engine—by which he has benefited the human race more than any other man, but who also did excellent work in chemistry— became acquainted in Paris with Berthollet's process, and brought it to Scotland. Here it was taken up with that energy characteristic of the Scotch, and a great stride forward was made, when in 1798, Chas. Tennant, the founder of the great firm, which has only recently lapsed into the United Alkali Company, began to use milk of lime in place of the more costly caustic potash, in making a bleaching liquid; and a still greater advance was made when, in the following year, Tennant proposed to absorb the chlorine by hydrate of lime, and thus to produce a dry substance, since known under the

---

President's Address at the chemistry section of the British Association for the advancement of science.

name of bleaching powder, which allowed the bleaching powers of chlorine to be transported to any distance.

THE ART OF BLEACHING IN 1799.

In order to give you a conception of the theoretical ideas prevalent at this time, I will read to you a passage from an interesting treatise on the art of bleaching published in 1799, by Higgins. In his chapter "On bleaching with the oxygenated muriatic acid and on the methods of preparing it," he explains the theory of the process as follows:—

"Manganese is an oxyd, a metal saturated with oxygen gas. Common salt is composed of muriatic acid and an alkaline salt called soda, the same which barilla affords. Manganese has greater affinity to sulphuric acid than to its oxygen and the soda of the salt greater affinity to sulphuric acid than to the muriatic acid gas, hence it necessarily follows that these two gases (or, rather, their gravitating matter) must be liberated from their former union in immediate contact with each other; and although they have but a weak affinity to one another, they unite in their nascent state, that is to say before they individually unite to caloric, and separately assume the gaseous state; for oxygen gas and muriatic acid gas already formed will not unite when mixed in consequence principally of the distance at which their respective atmospheres of caloric keep their gravitating particles asunder. The compound resulting from these two gases still retains the property of assuming the gaseous state, and is the oxygenated muriatic gas."

Interesting as these views may appear, considering the time they were published, you will notice that the *rôle* played by the manganese in the process, and the chemical nature of this substance, were not at all understood. The law of multiple proportions had not yet been propounded by John Dalton, and the researches of Berzelius on the oxides of manganese were only published thirteen years later, in 1812. The green gas we are considering was still looked upon as muriatic acid, to which oxygen had been added in contradistinction to Scheele's view, who considered it as muriatic acid from something, viz., phlogiston, had been abstracted.

DAVY'S WORK ON CHLORINE.

It was Humphry Davy who had, by a series of brilliant investigations, carried out in the laboratory of the Royal Institution between 1808 and 1810, accumulated fact upon fact to prove that the gas hitherto called oxygenated muriatic acid did not contain oxygen. He announced in an historic paper, which he read before the Royal Society on July 12, 1810, his conclusion that this gas was an elementary body, which in muriatic acid was combined with hydrogen, and for which he proposed the name "chlorine," derived from the Greek, signifying "green" the color by which the gas is distinguished.

The numerous communications which Humphry Davy made to the Royal Society on this subject form one of the brighest and most interesting chapters in the history of chemistry. They have recently been reprinted by the Alembic Society, and I cannot too highly recommend their study to the young student of our science.

Those who have followed the history of chemistry I need not remind how hotly and persistently Davy's views were combated by a number of the most eminent chemists of his time, led by Berzelius himself, how long the chlorine controversy divided the chemical world, how triumphantly Davy emerged from it, how completely his views were recognized, and how very instrumental they have been in advancing theoretical chemistry.

The hope, however, which Davy expressed in that same historic paper, "that these new views would perhaps facilitate one of the greatest problems in economical chemistry, the decomposition of the muriates of soda and potash," was not to be realized so soon. Although it had changed its name, chlorine was still for many years manufactured by heating a mixture of salt, manganese, and sulphuric acid in leaden stills as before.

CHLORINE AS A BYE-PRODUCT.

This process leaves a residue consisting of sulphate of soda and sulphate of manganese, and for some time attempts were made to recover the sulphate of soda from these residues, and to use it for the manufacture of carbonate of soda by the Le Blanc process. On the other hand, the Le Blanc process, which had been discovered and put into practice almost simultaneously with Berthollet's chlorine process, decomposed salt by sulphuric acid, and sent the muriatic acid evolved into the atmosphere, causing a great nuisance to the neighborhood.

Naturally, therefore, when Mr. William Gossage had succeeded in devising plant for condensing this muriatic acid, the manufacturers of chlorine reverted to the original process of Scheele, and heated manganese with the muriatic acid thus obtained. Since then the manufacture of chlorine has become a bye-product of the manufacture of soda by by the Le Blanc process, and remained so till very recently.

For a great many years the muriatic acid was allowed to act upon native ores of manganese in closed vessels of earthenware or stone, to which heat could be applied, either externally or internally. These native manganese ores, containing only a certain amount of peroxide, converted only a certain pecentage of the muriatic acid employed into free chlorine, the rest combining with the manganese and iron contained in the ore, and forming a brown and very acid solution, which it was a great difficulty for the manufacturer to get rid of. Consequently, many attempts were made to regenerate peroxide of manganese from these waste liquors, so as to use it over again in the production of chlorine.

These, however, for a long time remained unsuccessful, because the exact conditions for super-oxidizing the protoxide of manganese by means of atmospheric air were not yet known.

DUNLOP'S WORK ON CHLORINE.

Meantime, viz., in 1845, Mr. Dunlop introduced into the works created by his grandfather, Mr. Charles Tennant, at St. Rollox, a new and very interesting method for producing chlorine, which was in a certain measure a return to the process used by the alchemists.

Indeed, the first part of this process consisted in decomposing a mixture of salt and nitre with oil of vitrol—a reaction that had been made use of for so many centuries. The chlorine so obtained is, however, not pure, but a mixture of chlorine with oxides of nitrogen and hydrochloric acid which Mr. Dunlop had to find means to eliminate.

For separating the nitrous oxides Mr. Dunlop, adopted the method introduced twenty years before by the great Gay-Lussac in connection with vitriol-making viz., absorption by sulphuric acid, and the nitro-sulphuric acid thus formed he also utilized in the same way as that obtained from the towers which still bear Gay-Lussac's illustrious name, viz., by using it in the vitrol process in lieu of nitric acid. He then freed his chlorine gas from hydrochloric acid by washing with water, and so obtained it pure. This process possessed two distinct advantages (1) it yielded a very much larger amount of chlorine from the same amount of salt, and (2) the nitric acid, which was used for oxidizing the hydrogen in the hydrochloric acid, was not lost, because the oxides of nitrogen to which it was reduced answered the purpose for which the acid itself had previously been employed. But this process was very limited in its application, as it could only be worked to the extent to which nitric acid was used in vitrol making.

(*To be continued.*)

THE RELATIONS BETWEEN PHARMACY AND SCIENCE IN GERMANY.

As an illustration of the more sympathetic relation between the cultivators of science and persons engaged in the practical exercise of technical arts, attention may be called to the fact that the annual meeting of scientific men in Germany, corresponding to that of the American Association for the advancement of science, was held last September at Frankfurt on-the-Main, and that in conformity with the practice of recent years, one of the sections was devoted to the subjects of pharmacy and pharmacognosy. The sittings of this Section were therefore analogous to those of the American Pharmaceutical Association, and being held as part of a more extended scientific gathering, additional inducement to attend them was offered. The opening meeting was attended by about fifty pharmacists, medical men and professors, several of them coming from considerable distances. The proceedings were opened by an address from the President of the Section, Apotheker Engelhard of Frankfurt, in the course of which some suggestions were made to carry out the arrangements for future meetings of the section through the aid of the officials connected with the German Apotheker Verein. Then followed an address by Professor TSCHIRCH of Bern, giving a general summary of the results obtained from investigation of resins recently carried out by himself and by several of his pupils. The inquiry has now been extended to copal, dammar, sandarac, dragon's blood, asafœtida, galbanum, ammoniacum, sagapenum, opoponax, acaroid, benzoin, tolu and Peruvian balsams, styrax, amber and gutta-percha. As constituents of all these resins, substances having the character of esters and resinoid acids were isolated [together with others of an indifferent nature, as to the chemical classification of which there is still some uncertainty. Only a few resins contain representatives of all three groups, and, in most instances, a member of one or other of them preponderates, so that the natural resins may be, to some extent, classified according to their analogies in that respect. Another circumstance which admits of the classification of the esters present in natural resins is the occurence—as a constituent of the aromatic esters found in the several resins—of either benzoic acid or cinnamic acid, or derivatives of those acids. Thus, for instance, Peruviam balsam, tolu balsam, and Siam benzoin contain esters of benzoic acid, dragon's blood an ester of benzoylacetic acid, ammoniacum an ester of salicylic acid, while styrax, Sumatra benzoin and yellow acaroid contain esters of cinnamic acid, red acaroid an ester of *p*-cumaric acid, asafœtida an ester of ferulic acid, galbanum and sagapenum esters of umbellic acid, or its anhydride umbelliferone. The only member of the fat acids hitherto met with is succinic acid in amber. The resinoid alcohols present in the esters are also separable into two groups—resinols which are colorless and do not give a tannin reaction—and resinotannols which are colored and have a tannin reaction. The apparently intimate mutual relations of these bodies have yet to be investigated. The resinoid acids are chiefly oxyacids, corresponding to abietic and pimaric acid, and in many instances they are closely related. The remaining group of resin constituents are remarkable for their resistance to chemical agents and have not yet been studied sufficiently to determine their nature, though there is some reason for regarding them as compounds belonging to the aromatic series.

At the second meeting of the Section, Professor KUNZ KRAUSE of Lausanne, dealt with the chemistry of the tannins, and some of the reactions by which tannins may be distinguished more fully than by the iron reaction. A reaction of this kind, viz., the production of hydrocyanic acid in the presence of nitrous acid, was mentioned as being characteristic of certain kinds of tannin and also of other unsaturated compounds, as well as albumin. In a paper read by Professor VULPIUS on the preservation of several pharmaceutical preparations liable to alteration, the keeping of ether and chloroform in small bottles was recommended as a most effectual means of preventing alteration. The experience gained as to the ointment base recommended by MIEHLE—a mixture of hard and soft paraffin with woolfat—was spoken of by Professor VULPIUS as not being in all cases satisfactory, as, for instance, in making red oxide of mercury ointment or ointments containing potassium iodide.

Dr. v. OEFELE read a very interesting paper on the state of pharmacy before the time of HIPPOCRATES, in which he showed that although the practice of medicine was not separated from that of pharmacy among the Greeks and Romans, there was such a separation among the ancient Egyptians, from whom the distinction was handed down to the Copts and by them to the Arabians, and, in fact, that the term pharmacist is probably of Egyptian origin, being derived from Ph-ar-maki, which signifies the preparation of medicine from drugs. The Egyptian pharmaki who were engaged in that occupation belonged to the higher social ranks of writers or academically-educated persons comprising also the priests, physicians, statesmen and military commanders.

A paper of more practical character was then read by Professor PARTHEIL, of Bonn, upon the methods of testing various drugs, etc., in regard to their medicinal value, ammonium carbonate, extract of nux vomica and carbolic oil being the articles specially referred to. Dr. HEFFTER, of Leipzig, drew attention to the chemistry of the Cactacæ, a class of plants which have hitherto been regarded only as furnishing the food of cochineal insects. More recently the observations of SCHUMANN, LEWIN and others have shown that some members of the cactus family contain alkaloids. HEFFTER'S investigations have furnished very interesting additions to the knowledge of the Cactaceæ. He has shown that the mescale buttons known by the name of Pellote, and often mentioned under that name as being used for medicinal purposes by the Mexican Indians as well as in various religious ceremonies, are derived from a species of cactus viz., *Anhalonium lewinii*. Botanically closely related to that plant is *Anhalonium williamei*, which contains about 0.9 per cent. of the alkaloid to which HEFFTER gives the name of pellotine, $C_{13}H_{19}NO_3$. This crystalline base is a narcotic, and the plant from which it is obtained also contains abundance of malic acid and quercite, but no tannin. *Anhalonium lewinii* contains in smaller quantity a mixture of the alkaloids anhalonine, $C_{12}H_{15}NO_3$, mescalin, $C_{11}H_{17}NO_3$, anhalonidine, $C_{12}H_{15}NO_3$, and lophophorin, $C_{13}H_{17}NO_3$. *A. fissuratum* contains 0.02 per cent. anhaline, $C_{10}H_{17}NO$, and *A. prismaticum* contains a small amount of an extremely poisonous alkaloid. GOEBEL has suggested that these succulent plants may be protected from the attacks of insects by their poisonous constituents, and that appears to be the case in *A. lewinii*, which is destitute of protection by other means such as spines, wax-coating, etc. Guided by that observation, HEFFTER has examined other kinds of cactus which are unprotected, and has found traces of alkaloids in *Phylloceneus ackermanni*, *Epiphyllum russelianum* and *Astrophylum myriostigma*. *Echinoceneus mamillosus* contains a paralyzing base, *Anhalonium visnagra* a base producing violent tetanus, and some other kinds of cactus contain bases which act upon the heart.

At a sitting of the combined medical sections on the 23d of September, Dr. PAUL ROSENBERG of Berlin read a paper on the preservation of food materials by means of a dilute solution of formic aldehyde in methylic alcohol, which is diffused into the air from a porous clay slab by heating. Evidence was produced to show that by this means the development of pathogenic bacteria is prevented or very considerably retarded. Fresh meat, etc., treated in this manner, and then coated with a layer of gelatin, was shown, which had been kept for several months without losing its freshness of smell or taste. Another preparation recommended as applicable to therapeutic purposes contains menthol, which serves to counteract the irritating action of formic aldehyde upon the respiratory organs. The very small quantity of formic aldehyde requisite for producing the desired effect was insisted upon as an important point.

A paper was read by Professor HARTWICH of Zurich, on some abnormal peculiarities in the structure of aconite tubers, and another by Dr. SCHNEIDER of Dresden, on the determination of boric acid, drew attention to the very remarkable circumstance, that in the presence of alcohol vapor, boric acid is so very freely volatilized that it can be completely distilled over from a retort, if the neck is protected from cooling. The application of this is likely to be of considerable utility in analytical operations. Among the subjects of the remaining papers there were several of practical interest from a pharmaceutical point of view, such as the testing of copaiba balsam, the glucosides of black and white mustard, the methods of preserving solutions of volatile substances, and the preparation of ether intended for use as an anæsthetic.—*Pharmaceutical Journal.*

Miscellaneous Notes.

ARTIFICIAL CRYSTALLINE CARLSBAD SALTS.

Sulphate of potassium, 2; chloride of sodium, 18; sodium carbonate crystals, 61; sulphate of sodium crystals, 88; distilled water, 50 parts. Dissolve the sulphate of potash and the chloride of sodium in the water, and add this solution to the other two salts, previously melted in their water of crystallization. Evaporate to 180 parts, cool, and stir to prevent the formation of large crystals, without, however, allowing them to be reduced to powder. Dry in the air, moistening occasionally with a little of the mother liquor. By dissolving 8 grammes of this crystalline salt in a litre of water, artificial Carlsbad Sprudel water is obtained.—*Bullet. Commercial* xxiv., 323.

ARTIFICIAL KISSINGEN SALTS.

Chloride of potassium, 17; sodium chloride, 357; anhydrous sulphate of magnesium, 59; bicarbonate of sodium, 107 parts. Dry separately and rub together. Seven grammes dissolved in a litre of water forms artificial Kissingen water.—*Bull. Comm.* xxiv, 323.

A NEW STYPTIC

Accidentally discovered by Dr. Roswell Park, is formed by the combination of antipyrine and tannic acid in almost any proportion. The resulting compound is sticky, and may be applied on a sponge.—*Med. Council.*

FORMALDEHYDE IN OINTMENTS.

F. Lester finds that formaldehyde makes an excellent preservative for ointments. One pound of lard was heated just sufficiently to soften well and two drachms of formaldehyde was then stirred thoroughly into it. After cooling, the lard was placed on a shelf where it was exposed to summer temperature, but after keeping for some time it did not show the slightest trace of rancidity, appearing as fresh as when first treated. Ointment of zinc oxide similiarly prepared gave equally satisfactory results, whereas benzoated lard carefully prepared at the same time and kept under identical conditions soon went distinctly rancid. The objection that formaldehyde is a strong reducing agent is met by the suggestion that this need not be considered, having regard to the small proportion necessary.—*Western Druggist*, xviii., 345.

A REMEDY FOR PILES.

An ointment composed of equal parts of subnitrate of bismuth and castor oil. Keep the parts perfectly clean, and apply the ointment well into the rectum. It gives immediate relief and in all recent cases it cures.—*Chicago Med. Times.*

TOOTH POWDERS.

The Progress Medical for December 28, 1895, publishes the following formulas which are recommended by M. Metral in the Bulletin General de Therapeutique :

1. Strontium carbonate,	
Flowers of sulphur, each	225 grains.
Essence of rose	6 drops.
2. Strontium carbonate	90 grains.
Flowers of sulphur	195 "
Medicinal soap	55 "
Essence of rose	6 drops.
Mixture of gum arabic.	
Glycerine, each, sufficient quantities.	

The strontium salt, says the writer, assures buccal asepsis by reason of its preservative and antiseptic action. Safranine also gives good results as an antiseptic, and for this reason it should take the place of the ordinary coloring
M. Metral employs the following :
matter in liquid dentifrices.

Salol	30 grains.
Tannin	30 "
Saccharin	4 "
Spirit of lavender,	
Spirit of melissa, each	225 "
Safranine hydrochloride	0.50 "
Cologne water	2 75 ounces
Essence of peppermint	12 drops.

The *Therapeutische Wochenschrift* is cited as attributing the formula to Thomson :

1. Prepared chalk	2 ounces
Pulverized camphor	150 grains.
Saccharin	15 "

VEHICLE FOR CASTOR OIL.

A new method of disguising the disagreeable taste of castor oil is reccommended as follows : 15 to 20 grammes (say ½ fluid ounce) of the oil are mixed with a glassful of milk and heated under constant stirring. In a few moments a perfect emulsion is formed, to which is then added a little syrup of orange flowers, resulting in an active preparation of an agreeable taste. Another method consists in shaking castor oil with brown-beer in a bottle, or mixing the two in a jar with a rotatory motion. This is said to yield a mixture that is very agreeable to take.—*Phar. Centralh.*

TREATMENT OF WARTS.

The most effective cure is from Fowler's solution, two drops three times daily (in children half-drop three times daily), slightly increasing the dose each week. The warts crumble to pieces and disappear, especially when washing and drying the hands, so that the skin looks normal after two or three weeks. Relapses have never been observed.—*Medical Herald.*

WARM SOLUTIONS OF COCAINE.

Costa recommends that cocaine solution used for anæsthetic purposes should be first warmed to a temperature of 50° to 55°. These warm solutions even when diluted to 1 in 200 or 1 in 250 give a very marked reaction; the effect is immediate, the insensitive zone is less diffused, and compared with cold solutions, the toxic effect is diminished.—*Répert. de Pharm.* [3], vii., 360 after *Gaz. deg. Ospedal.*

NITRATE OF POTASSIUM FOR BURNS.

When applied to burns, a saturated cold solution of nitrate of potassium gives immediate relief from pain, and if employed soon after the accident, may prevent the formation of blisters and greatly lessen the inflammation. Poggi finds that compresses saturated with saltpetre solution have a similar refrigerant and antiphlogistic action; burns dressed with them become less painful and soon heal.—*L'Union Pharmaceut.*, xxxvii., 346.

MAGNESIA PASTE FOR BURNS.

In treating burns of the first and second degree, Vergely has obtained excellent results by covering the parts with a thick layer of a paste of magnesia and water, which is allowed to dry on the skin; as the dried flakes fall off they are replaced by a fresh dressing of moist paste. Under the protective crust of magnesia the sores heal rapidly without leaving behind them cutaneous pigmentations, such as are often observed after burns which remain exposed to the atmosphere.—*L'Union Pharmaceut.*, xxxvii., 346.

FORMALDEHYDE IN THE TREATMENT OF RINGWORM.

Having found that pure cultures of both forms of *Trichophyton* quickly succumb to even the vapors of formaldehyde, and that no subsequent growth was ever obtained from infested hairs which had been dipped in the 40 per cent. solution for five minutes, Dr. Salter was induced to try the local application of the remedy in the out-patient department of Guy's Hospital. Forty cases were operated on, the strong solution being applied with a brush or mop for ten minutes, the treatment being repeated every other day on four occasions and then discontinued. Only five cases required the method to be repeated; in the rest the fungus was completely eradicated. The application causes irritation and discomfort for a brief period, but does not vesicate the scalp; it produces, however, a thick crust, to remove which an emollient should be employed. A remarkable complication was noticed, in a few cases œdema of the face was noted some hours after the painting. In one case this was so marked as to prevent vision from swelling of the eyelids; there was no pain, redness or constitutional disturbance, and it quickly passed off.—*British Med. Jour.*, 2, 96, 651.

PROF. D. T. MACDOUGAL concludes an admirably written article on *The Physiology of Color in Plants* (Appleton's Popular Science Monthly, May, 1896) as follows :

1. Chlorophyll converts light into energy by the aid of which protoplasm containing it is able to build up foods from carbon dioxide and water.

2. Non-green coloring substances serve as a screen between the chlorophyll and the too violent rays of the sun, at the same time converting the absorbed portion of the rays into useful heat.

3. Non-green coloring substances convert the light which has passed the chlorophyll bodies into useful heat.

4. Coloring substances absorb the blue-violet rays and prevent their disintegrating effect on nitrogenous compounds *in situ* or *in transit* in the interior of the plant.

5. Non-green coloring substances are in some instances simply by-products or waste matter from the physiological processes, and in the present stage of development and under ordinary conditions are of no use to the plant containing them.

6. Colors serve as an attractive, guiding or warning device for insects and other animals, more especially for the purpose of securing cross-fertilization and protection from injury.

THE Alumni Journal

Published Monthly under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. NOVEMBER, 1896. No. 11

SUBSCRIPTION:

Per Annum,	**One Dollar**
Single Copies,	**15 Cents.**

All communications relating to subscriptions for the Journal, should be addressed to Nelson S. Kirk, 9 East 59th Street, New York City.

All communications intended for the Editor, original contributions, exchanges, books for review, etc., should be addressed to
Alfred H. Mason,
59 Maiden Lane,
New York City.

All communications relating to advertisements or to the business of the Journal, should be addressed to
Thomas M. Davies,
543 Third Avenue,
New York City.

All copy for publication, (written on one side of the paper only), or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

EDITOR.
ALFRED H. MASON, Ph. C., F. C. S.
CONTRIBUTORS:
Alumni Association,
WM. HOBURG, JR., PH. G., 115 West 68th St., New York.
Alumni Notes, Socials, etc., and Classes prior to '93.
GEO. F. BURGER, PH. G., 115 West 68th St., New York.
Bibliography,
ADOLPH HENNING, PH. G., 68 William St., New York.
Class of '93,
EUGENE F. LOHR, PH. G., 375 Third Ave., New York.
Class of '94,
NELSON S. KIRK, PH. G., 9 East 59th St., New York.
Class of '95,
B. DAUSCHA, PH. G., Caldwell, N. J.
Class of '96,
J. HOSTMAN, 204 Bowers St., Jersey City, N J.
Class of '97,
Q. E. D.
Legal Notes,
H. A. HEROLD, 34 Pine St., New York.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

THE Editor thanks those gentlemen who have responded to the appeal in our October issue for information respecting the history and location of those graduates from the College who are living, that they may be brought in touch with each other by the publication of such information. We ask those who did not notice this appeal to refer to page 261 of the October issue of this JOURNAL. The College has not, at the present time, records of this nature respecting any of its graduates.

IN MEMORIAM.

Just as our Journal was going to press, the sad news of the sudden death of our much esteemed friend and editor, ALFRED H. MASON reached us. It came to us as a thunderbolt out of a clear sky. Mr. Mason had been enjoying very good health until last Tuesday evening, when he took a severe cold at the lecture of Mr. Henri Moissan. He left his desk on Wednesday afternoon, intending to return on Friday, but alas—the cold turned into Pneumonia, and this morning he succumbed to heart failure.

The death will be a severe blow to all who had the honor of his acquaintance, as through his rare qualities and ability he quickly captured the esteem of all.

Mr. Mason was elected an honorary member of the Alumni Association last April, and through his death the Association has lost one of its dearest friends.

THE Board of Pharmacy has taken action to shut down the illegitimate trading of the calico druggists. Funds are wanting to meet the opposition which these millionaire frauds are able to bring to bear against honest methods. Surely the pharmacists of New York can get together and contribute handsomely towards such a cause. Money talks, and these competitors know where the Board is weak just now. Who will help?

ON the 27th of October, Professor Henri Moissan, the eminent French Chemist and Toxicologist who is visiting America for the first time as a delegate from the French Academy of Sciences to the Princeton celebration, delivered a lecture on his "Researches with the Electric Furnace" by invitation of the New York Academy of Sciences, the New York Section of the American Chemical Society, the American Institute of Electrical Engineers, the College of Pharmacy of the City of New York, and the New York Section of the Society of Chemical Industry. The representatives of the College on this committee were Mr. Edward Kemp, President, Professors Coblentz and Rusby, Dr. Rice, Mr. H. W. Atwood and Mr. D. O. Haynes (by request of Professor Doremus) and of the Social Chemical Industry, Prof. Chandler, Chairman, Mr. A. H. Mason, Vice-President, Mr. R. C. Woodcock and Drs. Schmeitzer, Schieffelin and I. H. Stebbins, Jurist. The lecture was illustrated with brilliant experiments. Professor Moissan is Professor of Toxicology in the Paris School of Pharmacy. He was entertained at a complimentary banquet on the 28th of October.

If you have not already subscribed to the ALUMNI JOURNAL, do so at once. It will pay you.

Alumni Association.

Regular meeting of the Alumni Association, College Lecture Room, October 14 1896. Meeting called to order at 9.45 P.M., by President Searles.

There were present Miss K. C. Mahegin and Messrs. Diekman, Ebbitt, Henning, Kirk, Kreuder, Gies, C. S. Erb, L. Erb, Herold, Ferguson, Binger, Lohr, Tannenbaum, Stoerzer, Eisner, Dauscha and Hoburg.

Minutes of last meeting read and adopted.

Mr. Ebbitt then brought up the subject of heating the Alumni Room at night, and after considerable discussion, it was moved and seconded that a committee be appointed to see the Curators of the College, as to the best method of heating this room; motion carried, and the President appinted Messrs. Ebbitt, C. S. Erb and Kirk.

Mr. Herold reported as a committee of one, on the codification of Constitution and By-laws; report accepted on motion.

Moved and seconded that the entire report, together with the two amendments recently adopted, be published in the ALUMNI JOURNAL; motion carried.

The appointment of more than five members on the Ball Committee, as original motion specified, being unconstitutional, a motion was made and carried to empower the President to add to this committee as many members as in his judgement he deemed advisable, whereupon Dr. Gies and Mr. C. S. Erb were appointed as members of this committee.

Report of Ball Committee read by the Chairman, Mr. Herold, as to the time and place of the Alumni Ball. Lexington Ave. Opera House December, 15, 1896; Lenox Lyceum, January 20, 1897; Madison Square Banquet Hall, January 20, 1897. After a short discussion the committee reported in favor of Madison Square Banquet Hall, for *January 20th, 1897*; report unanimously adopted.

Motion made and seconded that the report of the Entertainment Committee, read by the Chairman, Mr. Kirk, be accepted, carried.

Mr. Ebbitt spoke at some length on the subject of an "Alumni Dinner," to be held between the present time and the date of the Ball, to bring the officers and members of the Association closer together, and to promote sociability and good-fellowship among its members; it was suggested that a few public speakers be invited to participate, and address the assembled guests on subjects of the day, of general interest; not on pills and powders, etc.

Motion was then made and carried to hold an "informal dinner" on the night of December 2, 1896. The President being empowered by motion of the Association, to appoint a Dinner Committee of as many members as he thought advisable, appointed the following: C. S. Erb, L. G. B. Erb, Drs. Diekman, H. B. Ferguson and Mr. Eisner.

Mr. Herold, Chairman of Lecture Committee, then read the report of said committee, which was accepted on motion.

Motion made and carried that a Press Committee, consisting of Mr. Lohr as Chairman, and the Reporters of the different classes be appointed, viz.: Chairman, Mr. E. F. Lohr, and Messrs. Kirk, Hostman, Burger, Dauscha and Jeanot.

There being no further business, the meeting adjourned.

THE second of the series of lectures given under the auspices of the Alumni Association will be delivered by Dr. A. E. Gallant, November 11th, 1896, subject, "*First Aid to the Injured.*" he will be remembered as the gentleman who lectured on the same topic last season, He will give an entirely different lecture, full of new things and equally entertaining. Dr. Gallant had several first aid classes at the College last year, and expects to continue them, this session. The students and their friends, as well as the friends of the Alumni Association are very cordially invited to attend Wednesday evening, November 11, 1895, at 8 P. M., in the large lecture hall.

THE lecture on December 9th, by Mr. G. W. Hopping, will be of an educational character, entitled "*Hints as to Business Methods*," and it is hoped, the students and those already in business, will avail themselves of the opportunity to listen to some plain talking and advice from an expert.

WM. A. HOBURG, Jr.,
Secretary.

BOARD OF PHARMACY.

At the examination held October 12th, fourteen applicants were examined, of which the following passed: J. N. Slabey and Werden B. Potter.

During the last three months 146 pharmacists were registered.

The next examination will be held on Monday, November 9th, at 9 A. M.

WILLIAM BALSER, Sec'y,
218 East 13th St.

College Notes.

RECEPTION TO JUNIOR CLASS.

The commencement of the Sixty-seventh session of the College on the evening of Monday, September 28th, was marked by a pleasant innovation in the ceremonies usually incident to the opening of the regular lecture term. It has been customary heretofore to assemble the newly enrolled students at the college at a stated hour in the afternoon of the opening day, and conduct them at once over the different departments under the guidance of a committee of the instructors, who explained the details of the different courses and arranged for a division of the class into sections so as to facilitate the work of the departments. This year a different custom was adopted, and this feature of the college course was set down in the calendar as "reception to the junior class." The junior students were assembled in the main lecture hall of the building at 8 o'clock in the evening, being escorted there by a committee of the senior class appointed for this purpose. The hall was well filled, the number present furnishing a gratifying indication of the popularity of the country's leading institution for the education of students in the ancient art of pharmacy.

Hermon W. Atwood, the chairman of the Lecture Committee, presided during the evening, and with him on the platform were seated Prof. Virgil Coblentz, general director of the chemical and pharmaceutical laboratories; Professors Rusby, Ferguson (G. A.), Jelliffe and Diekman, and Instructors Oehler, Reilly and Ferguson (Harry B). The Board of Trustees was represented by Thomas J. Macmahan, Albert Plaut, Charles S. Erb, Ernst Molwitz, and Charles Holzhauer.

As a means of establishing at once a friendly feeling between the new students and their instructors and bringing them into close touch, the arrangements of the evening could not well have been improved upon. The teaching faculty and trustees of the college were introduced to the assembled students, and the professors delivered brief addresses outlining the courses of instruction for which they were respectively responsible. The trustees spoke of the privileges of the students and alluded fully in some instances to the high standard of education maintained by the authorities of the C. P. C. N. Y. Thus, after a few introductory remarks from Chairman Atwood, who extended to the newly enrolled students a cordial welcome, Professor Ferguson was introduced and explained in detail the division of work for the junior term, and invited questions as to features of the course not touched upon in his remarks or which were not fully understood. He was followed by Professor Coblentz, whose name was evidently a familiar one to his listeners, for he was greeted with considerable handclapping. He welcomed the students and expressed the hope that the enthusiasm so fully manifested that evening would be maintatned throughout the year. Many of the juniors were in the habit of regarding the elementary studies of the first year as of little importance. He cautioned them against entertaining notions of this kind, and pointed out the advantages to be derived from close application to study during the first term at college. In conclusion he urged the students to ask questions on all subjects not well understood.

Professor Rusby spoke next. He told the students how pleased he was to note that the class knew a good thing when it saw it. He observed the applause which greeted Professor Ferguson. That gentleman was the doorkeeper of the college, as he set the preliminary examination, and he was responsible for the attendance that evening, though he (the speaker) was not sure as to whether he should be blamed or praised for the size of the audience. He hoped they came wound up for study—not, however, like the Waterbury watch which requires to be wound up afresh every day.

Professor Jelliffe caused some merriment by telling the students that they would be under the care of Professor Rusby until after the New Year holidays, when he would take them in hand. This arrangement, he said, gave them 16 (days) to win. The boys cheered the allusion mightily, though whether they understood its political significance or not, is another thing.

Professor Diekman met with a great demonstration from the seniors, who cheered until requested to desist. He called attention to the newly instituted department of practical dispensing. There had been some question as to whether the instruction would be optional or obligatory. He wished to settle this now by stating that attendance upon that part of the course was obligatory. He then stated that students when leaving the college after graduating "could feel that you have done as well here as you could do anywhere," a statement which was promptly corrected by Mr. Atwood, who assured the students that they would have the feeling when they graduated that they had done better at the New York College than was possible elsewhere.

Other addresses followed. Secretary Mason impressed his listeners with the necessity of close application to study. "Work, work, work," said he, 'was the foundation of success'. It was nearly 40 years since he had occupied the position of those in front of him, and he still found it necessary to *work, work, work.* His remarks were well received and at the close he was loudly cheered.

T. J. Macmahan made a forcible address, punctuated by many witticisms. The main object of the chairman in inviting him to speak was, he said, to distinguish him from the faculty. Mr. Atwood was afraid that he might be mistaken for one of the professors. Now he was not even a member of the ExaminationCommittee, else he would see that they would all pass. Mr. Mason had neglected to bring out an important part of Mr. Keller's speech, which was: "I have never accomplished anything without work. What failures I have experienced were always due to neglect of work." Mr. Macmahan came out as an apologist for the New York City Board of Pharmacy, and gently scored the representatives of the press present, for their attitude toward the Board. He regards the *American Druggist* as the head and front of all offending in this regard, and cautioned the students not to follow its wicked examples in criticising boards of pharmacy who fail to enforce the law.

Brief remarks were then made by other members of the Board of Trustees. Albert Plaut of Lehn & Fink, emphasized Mr. Mason's remarks concerning the value of application to work by instancing the successful drummer, saying that it was not the best dressed man who succeeded best, nor the most affable one, but the one who worked hardest. He was followed by Messrs. Molwitz, Holzhauer, Erb and Searles, who each in turn made brief, but pleasing addresses.

T. J. Keenan of the *American Druggist and Pharmaceutical Record* was invited to address the students as a representative of pharmaceutical press, and he took advantage of the opportunity to reply to the remarks of a previous speaker, concerning a printed criticism of the local Board of Pharmacy.

He stated that if the members of the Board of Pharmacy felt that they had been unjustly treated in the journal which he had the honor to represent, the columns of the *American Druggist* were open to a statement to that effect, to occupy as much space as the article complained of. He complimented the Alumni Association on the success of the ALUMNI JOURNAL under its present management, and said it was a credit to the college.

The proceedings were brought to a close by an inspection of the laboratories and working rooms of the building. The routine work of the several departments was fully explained to juniors by a committee of the senior class under the direction of the head of the department to which they happened to be introduced. This terminated the ceremonies of the evening.—*American Druggist.*

N. Y. C. P. Cyclers.

THE success of the century run on November 18th, was unfortunately marred by inclement weather, in fact the months' schedule suffered materially from this cause, but enough interest exists among the members to make a run seem always possible. For instance the century, Sunday morning, 7 A.M., found some of the enthusiastic members assembled at the College, though a more disagreeable morning could not have been selected; cold, rainy, raw, in fact a typical "pneumonia morning."

The small party set off, in spirits that hardly could be called high. At the 23d street ferry, on both sides, re-inforcements were found, and led by Mr. E. Dixon Williams of the Century Wheelmen, who kindly volunteered to pace, our wheeling representatives spun along Bedford avenue to the Eastern Parkway, over to the "Merrick," where Mr. Williams increased the pace; short stops were made at Sprinfield and Freeport, the division arriving at the Cortlandt House, Bayshore (50 m.) at 1 P.M., where dinner was served.

After a good repast and rest, the return start was made at 2:40 P. M. Again Mr. Williams services were "brought into play," and at a 15 mile clip, the journey home was pleasant and interesting; arriving at the College at 8:50 the run was made in a trifle over 13 hours, which was considered exceedingly good, under the circumstances. Thus ended the first century run of the N. Y. C. P. Cyclers, which but for the weather would have been better patronized.

The survivors, who are now wearing medals, were L. G. B. Erb, '94; Charles Stoerzer, '94; Samuel Cohen, '94; A. C. Riegel, '96; and E. Dixon Williams; other participants were W. A. Hoburg, '93; Louis Marcus, '94: C. R. H. Gerken, '96; and Russell Marsh. SCORCHER.

Alumni Notes.

ENTERTAINMENTS.

October 21st marked the opening of the series of entertainments tendered to members of the Alumni, Seniors and Juniors, the plan this season will be quite similar to last. Receptions being held on the Wednesday following the regular meeting night, smokers now and then, and a new feature in the readings, which should prove popular, inasmuch as many of them will be given by Alumni members on topics of interest, consisting of original papers and good clippings. We hope to have all our bright members contribute at least once during the season.

Following is the schedule:

Nov. 4. Reading.
" 11. Lecture.
" 18. Reception.
" 25. Reading.
Dec. 2. Banquet.
" 9. Lecture.
" 16. Reception.

Respectfully,
THE ENTERTAINMENT COMMITTEE.

Class Notes.

POST GRADUATE NOTES.

The post-graduate class of '97 is composed of the following members:

Messrs. C. F. Pfister, '92; L. W. Geisler, '94; C. H. A. Stoerzer, '94; P. B. Bear, '96; J. H. Eberhardt, '96; P. J. Eckhard, '96; C. G. H. Gerken, '96; W. B. Potter, '96; Misses J. M. Sawall, '96 and M. O'Connor, '96.

A meeting of the class was held Wednesday afternoon, October 14th, and it was decided that the class be known as the "Second Post-Graduate Class of the N. Y. C. P." The following named officers were elected: John H. Eberhardt, Jr., Pres.; Chas. G. H. Gerken, Vice-Pres.; Werden B. Potter, Treas.; Julie M. Sawall, Sec.; Madge O'Connor, Reporter.

It will be the endeavor of the reporter to reflect the progress of the class, and when necessary castigate its follies, and to this end she solicits such information, as will aid in the discharge of this duty.

MADGE O'CONNOR, A. B.

'93 NOTES.

I have an item of news, which I feel sure will be welcomed with joy by all readers of this column. Mr. J. Tannenbaum, my predecessor, as official reporter, has kindly volunteered to collaborate with me, and will, after this month, send all articles of interest to the class, which he hears of, to the editor. A decided improvement in the quality and quantity of the news will be apparent with the next issue, of that I feel sure.

GEORGE MERKER is now head clerk for Mr. Aronstamm, 105th street and 3d ave. There won't be much room left at the top if our boys keep on going up at the rate they have been lately.

J. P. COLONEL has subscribed to the JOURNAL. He is the proprietor of a prosperous pharmacy on 3d avenue, near 109th street.

ONE of the most prominent figures in north New York social events is James Brooklyn Wilson. He is the leading light in literary and chess circles, his habit of thinking profoundly making him a valuable acquisition to the society of those interested in such subjects.

AT an auction which was held recently, there was an aggregation of wit, beauty and wealth, such as is seldom brought together. There was Uhle, Tannenbaum and Jarchow. Said Uhle, "Don't bid on chandeliers, I want them."

Tanny said "Let me get a show-case as cheap as I can."

"Leave the soda fountain to me," said Jarchow."

With true fraternal feeling they agreed and adjourned across the street to bind, or rather float the compact. When they returned the store had been sold in a block, and all Uhle could do was to gaze reproachfully on the auctioneer who did not seem to feel remorse.

Expense account: Uhle, for cab and fluids, $2.40; Jarchow, car fare and liquid food, 60c.; Tanny, wear and tear on shoes and for binding one compact, 37c.

IN the course of my meanderings I met Teddy Edlich, and on my asking him to wander with me, he said me nay. As he did so, he gave vent to the sage remark, that there are many things we would do, if it were not for the thought of the next morning. Another philosopher discovered.

EUGENE F. LOHR.

375 Third Ave.

'94 NOTES.

ROLL OF HONOR October 14th: Burger, Erb, Fendler, Geisler, Grube, Herold, Kirk, Kreuder and Stoerzer.

MAX A. AUERBACH was so seriously injured some time ago, while riding his wheel, that he was advised by his physician not to study this season, consequently he accepted a position with Gustav Schwab at Tompkinsville, Staten Island.

EMIL SCHLICHTING writes from Stade that the ALUMNI JOURNAL reminds him of the "jolly college days." He is now in Munich. What a pleasure it would be, if more of our classmates were as thoughtful as Friend Schlichting.

HENRY FENDLER with his phenominal hersute appendage, recently conducted Herold through the Morgue. As he is nearly an M. D. now, it was a "dead easy" task for him.

THIS story is told of a certain party who avails himself of college principles, and was a short time ago, overcome while generating chlorine gas in the laboratory; being a healthy individual, though addicted more or less to the use of alcoholic stimulants, the following theory was advanced. By the action of chlorine gas on the alcohol present in his system, aldehyde was formed, further saturation produced chloral, which in turn was acted upon by the alkaline juices forming chloroform.

EZRA J. HORTON who is located in Peekskill, is reported as being an exceedingly hospitable host. During the summer some of our boys have been to see him, and they all speak of his "putting them on the hose," during their visit.

AT the October reception of the Eighth Regiment, I was much interested in the manoeuvers of Segt. Davies and his company of seven. Though the smallest company on the floor, he commanded them in such a masterly way as to come in for a large share of applause.

ONE of our boys who spent his vacation in Boston this year, overheard a precise maiden fair, call for a thimble as an argentous turnicated cone, convex on its summit and semi-perforated with symmetrical identations.

BEAR these facts in mind:—Alumni Reception at College, on Nov. 18th; Dinner on Dec. 2d; and Ball, Jan. 20, all on Wednesday evenings.

N. S. K.

'95 NOTES.

IN MEMORIUM.

It becomes my sad duty to inform my classmates of the death of Randolph R. Reid of Margaretville, Delaware County, New York. But one short year ago he was apparently in perfect health, but alas—a serious cold contracted during the summer of 1895, developed into tuberculosis, which on September 22, 1896, resulted in his death. Randolph R. Reid was born twenty-five years ago in Margaretville, where he always lived. After graduating from the New York College of Pharmacy, he returned to his native town, where he opened a drug store, in which business he was engaged at the time of his death.

Louis G. Scharnikow is with Frederick Kleinschmidt, 579 Columbus avenue, corner of 88th st.

August Mueller has succeeded Hoefling, and is now with William F. Krembs, Madison ave. and 89th st.

Morse is with C. W. Snow & Co., wholesale druggists, Syracuse, N. Y.

Sherman has also located in Syracuse, but his exact address is not known.

C. W. Hitchcock, who was with us in our Junior year, is managing the West End Pharmacy at Newark, New Jersey.

Owens can be found in Jersey City. Married life seems to agree with him, he is getting stouter every day.

Foster (also a benedict) is in Newark.

Wendell, who was also in our Junior year, is studying medicine at the College of Physicians and Surgeons in Baltimore.

Manville has again returned to New York for a short visit. He is as bright and witty as ever. During his stay here he can be found at 45 West 71st st.

C. S. Woodhul Davis has recently purchased the E. P. Douglass Pharmacy in Groton, Conn.

At the lecture on Wednesday evening, Oct 14, among the audience present, I noticed the following '95 boys: Messrs. Gies, Duerr, Mueller, Aquare, Boenke, Perilli and Ferguson.

B. Dauscha, Ph. G.,
234 East 87th Street.

'96 NOTES.

Our class was well represented at the first Alumni Lecture of this winter delivered October 14th. Among those present were Schnackenberg, Uhe, Potter, Toplan, Tanhard, Diehl, Thielke, Hirschman, Droelinger, Gregorius, Ricksecker, Perilli, and several others the reporter could not interview.

Potter informed me that he was taking the Post-Graduate, as is also Gerken, who has resigned his position with Schlessinger in Brooklyn, to do so.

Gregorius after spending a month in the country has resumed his position with his father.

Diehl may be found at Schlessinger's, 624 Bedford ave., Brooklyn.

I was quite surprised to see Schnackenberg at the lecture, as I had only a few days before received the following letter from him:

Friend Hostmann.–I am not feeling very well at present in consequence of an accident which happened as follows: In the excitement which sometimes accompanies the attempt to escape an unruly collector, my kneecap made the unpleasant acquaintance of the door of my safe (empty), and the result is that I have been limping for several days past. Owing however to the vigorous use of "Chippewa Indian Oil" as manufactured by the gold medallist of '96, I am speedily recovering.

Yours pharmaceutically,
(Signed) Karl Schnackenberg, Ph. G.

Perilli is managing his father's store on Sullivan st. near Grand.

Our Treasurer, W. Vincent seems to be quite a sport. I have been informed that his cabin sloop yacht "Loyal" won the regatta of the Jamaica Bay Club, of which he is a member. I have since learned that in addition to flying the Club pennant, it also had the N. Y. C. P. '96 flag flying at the top, and little Willie attributes his success in part to this fact. He also won the swimming and tub races, and came in second chasing the duck (he does not say what kind of a duck.) Although he received several silver cups free, he still claims to be against free silver.

It has been decided to hold an Alumni Dinner, December 2d. Whoop it along boys, let all of the '96 contingent be present to make the hall resound with the old familiar, 1-2-3 Benzol Phenol, etc.

Jeannot Hostmann, Ph.G., ('96.)

CONSTITUTION
OF THE
ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY
OF THE
CITY OF NEW YOKK.

Adopted March 17, 1875.

ARTICLE I.

SECTION I. This Association shall be called the ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

SEC. 2. Its designs shall be to advance the interests of the College, to bring its graduates into closer fellowship with each other, and to promote sociability and good feeling among them; to advance the science and art of Pharmacy; to encourage and assist under-graduates, and to keep a record of the pharmaceutical work and services of its members.

ARTICLE II.

SECTION I. All graduates of the College of Pharmacy of the City of New York are eligible for membership.

SEC. 2. This Association shall consist of resident, non-resident and honorary members, the latter consisting of the Faculty of the College, who shall be exempt from all financial obligations to the Association.

SEC. 3. Meetings shall be held annually, a quorum consisting of ten members.

ARTICLE III.

SECTION I. The officers of the Association shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and a Registrar, elected annually, and an Executive Board of six, of whom two shall be elected annually to serve three years.

SEC. 2. All the above mentioned officers shall be elected by ballot at the annual meeting and shall enter upon their duties at the next regular meeting of the Executive Board, holding office until relieved by their successors.

ARTICLE IV.

SECTION I. All moneys received in single payments for life membership, to which shall be added such sums as may be bequeathed or donated to the Association for this purpose, and such surplus funds as may from time to time be voted by the Association, shall be set apart as a reserve fund, and shall be safely invested or deposited by the Treasurer in the name of the Association.

SEC. 2. This Reserve fund shall not be used for the current expenses of the Association, and shall not be drawn upon except on the signature of the President and the Treasurer.

ARTICLE V.

Every proposition to alter or amend this Constitution shall be submitted in writing to the Executive Board, on or before its October meeting; said Board shall notify the members of such proposed alterations or amendments, and shall present them to the next annual meeting for for action, when, upon receiving the votes of three-fourths of the members present, they shall become a part of this Constitution.

BY-LAWS.

Adopted March 17, 1875.
As Amended October 1, 1896.

ARTICLE I.

DUTIES OF THE PRESIDENT & VICE-PRESIDENTS.

SECTION I. The President shall preside at all meetings of the Association, and, in his absence one of the Vice-Presidents. In the absence of all, the senior member of the Executive Board present shall perform the duties of the President.

SEC. 2. In meetings, the President shall take the chair at the appointed time and call the Association to order, when he shall perform such duties as appertain to his office according to the laws and usages of deliberate bodies.

SEC. 3. He shall appoint all committees, unless otherwise provided for in these By-laws or directed by the Association, sign the certiffcate of membership, and countersign all orders on the Treasurer.

SEC. 4. He shall present at the annual meetings and address on subjects of professional interest, embodying a report on the work of the Association during the year, with such suggestions for its future guidance as his experience may suggest

ARTICLE II.

DUTIES OF THE SECRETARY.

SECTION I. The Secretary shall keep a correct record of the proceedings of the Association and Executive Board, and carefully preserve and file all reports, essays and papers received by the Association, and furnish such copies or extracts as may be required for publication.

SEC. 2. He shall furnish the chairman of every committee with a list of its members, and a draft of the business submitted, and notify each member of his election and the time and place of every meeting.

SEC. 3. He shall conduct the correspondence of the Association, keeping copies of all letters written by him relating to its affairs,

SEC. 4. He shall report to the Executive Board when required, and furnish the Registrar with such papers as he may need.

ARTICLE III.

DUTIES OF THE TREASURER.

SECTION 1. The Treasurer shall collect and take charge of all moneys due to the Association and no other officer shall have authority to make such collections; he shall hold, sign and issue the certificates of membership, and shall pay no money unless by the order of the Executive Board, countersigned by the President.

SEC. 2. He shall keep a full and correct account of his transactions, and report to the Executive Board when required, and to the Association at its annual meeting, when his accounts shall be audited.

SEC. 3. He shall report to the Executive Board the names of such members as have failed to pay their annual contributions for three years and of those who have neglected to return their certificates of membership, after having been officially disconnected with the Association, and duly notified to return them.

ARTICLE IV.

DUTIES OF THE REGISTRAR.

SECTION 1. The Registrar shall keep a record of each member, showing when and where he was born, the name of his preceptor, the subject of his thesis, the date of his graduation, the honor prizes won by him and other facts of interest.

SEC. 2. He shall report to the Executive Board the titles of papers written, or other worthy pharmaceutical work performed by members, which may come to his knowledge, and shall record the same when so directed by the Board.

SEC. 3. He shall communicate, if possible, with each member once a year, asking of information of changes in business or professional engagements, and shall record the same with the members permission.

SEC. 4. He shall file and preserve all letters and other papers belonging to his office, and shall notify the Secretary and Treasurer of all changes in addresses of members which may come to his knowledge, and shall make a written report to the Association annually, containing such information as may be of general interest.

ARTICLE V.

DUTIES OF THE EXECUTIVE BOARD.

SECTION 1. The Executive Board shall have the general management of the affairs of the Association under its direction.

SEC. 2. It shall hold its meetings in January, March, June and October, when five members shall constitute a quorum. These meetings shall be open to all members of the Association, but only members of the Board shall vote.

SEC. 3. The officers of the Association shall be ex-officio members and officers of the Executive Board.

SEC. 4. Any member of the Executive Board not attending three regular successive meetings without a reasonable excuse, shall be dropped from the Board and his successor at once elected.

ARTICLE VI.

OF MEMBERSHIP.

SECTION 1. Any graduate of the College of Pharmacy of the City of New York who desires to become a member of this Association, may make application in writing, upon a proper blank, to the Secretary, who shall report the same at a regular meeting, when the applicant may be elected by a two thirds vote.

SEC. 2. No graduate shall become a member of this Association, nor have his name placed upon the roll, until he shall have paid to the Treasurer the sum of three ($3.00) dollars entrance fee, and his annual contribution for the current year.

SEC. 3. Every resident member shall pay in advance to the Treasurer the sum of two ($2.00) dollars as his annual dues, until he shall have made twelve annual payments, when he shall become a life member, and shall be exempt from further annual payments.

SEC. 4. Any resident member who shall pay in advance to the Treasurer the sum of fifteen ($15.00) dollars at one time, in addition to the entrance fee, shall become a life member and be exempt from further annual payments.

SEC. 5. Non-resident members shall be those residing more than thirty miles from New York City. Their annual dues shall be one ($1.00) dollar, payable for seven years and they may become life members by a single payment of seven ($7.00) dollars in advance in addition to the entrance fee.

SEC. 6. Members shall be entitled to receive a certificate of membership signed by the President, one Vice-President, the Secretary, the Treasurer and the Registrar.

SEC. 7. Resignations of membership must be made to the Treasurer in writing, and by him reported to the annual meeting, but no resignation shall be accepted from any one who is in arrears to the Treasurer. No member in arrears will be entitled to vote at an annual meeting.

SEC. 8. Any member may be dropped from the roll, after due notification, for non-payment of dues for three successive years, by vote of the Executive Board, and any member so dropped, may be re-instated by vote of the Executive Board upon payment of his arrears.

SEC. 9. All charges against members of improper conduct or violation of the Code of Ethics adopted by the Association, shall be made in writing to the President, who shall, at his discretion, cite the offending member to appear before the Executive Board to answer them. Should the charges be sustained, the Board shall report the offender to the annual meeting, when he may be expelled by a two-thirds vote.

SEC. 10. No member shall be eligible to the office of President or Treasurer until he has been a member in good standing for a period of not less than three years.

ARTICLE VII.

SECTION 1. There shall be appointed annually, five delegates to the meeting of the American Pharmaceutical Association.

SEC. 2. There shall be appointed annually by the President, a committee on papers and queries, consisting of three members, whose duties it shall be to procure answers to queries, and papers on pharmaceutical subjects, to be read at the meetings of the Association.

SEC. 3. There shall be appointed annually by the President, a Committee on Publication, consisting of three members, whose duty it shall be to prepare and publish an accurate report of the proceedings of the Association, and such other matters as may be deemed advisable by the Executive Board.

SEC. 4. All standing committees shall be appointed to serve during the term of office of the President by whom they are appointed.

ARTICLE VIII.

OF MEETINGS.

SECTION 1. The annual meeting shall be held as near Commencement Day as may be convenient.

SEC. 2. Regular and pharmaceutical meetings may be held at 8 P. M. on the second Wednesday of each month, excepting July and August, at the call of the President.

SEC. 3. The order of business at the annual meeting shall be:

1. Calling the Roll.
2. Reading the minutes of the Executive Board for the past year.
3. Address of the President and reference to any portion of it requiring action to an appropriate committee.
4. Report of Treasurer and reference to Auditing Committee.
5. Report of committees and action thereon.
6. Report of Registrar.
7. Election of Officers.
8. Unfinished Business.
9. New Business.
10. Election of new members.
11. Reading correspondence from absent members.
12. Reading of Essays and Reports of scientific subjects.
13. Adjournment.

ARTICLE IX.

MISCELLANEOUS.

SECTION 1. In all such points of order as are not provided for in these By-Laws, the Association shall be governed by the rules of Cushing's Manual.

SEC. 2. Every proposition to alter or amend these By-Laws shall be submitted in writing to the Executive Board and shall be presented at subsequent regular meeting of the Association, when, upon receiving the votes of three-fourths of the members present, it shall become a part of the By-Laws.

SEC. 3. No one or more of these By-Laws shall be suspended except by unanimous consent.

SEC. 4. The Code of Ethics of the College of Pharmacy of the City of New York shall be the Code of Ethics of this Association.

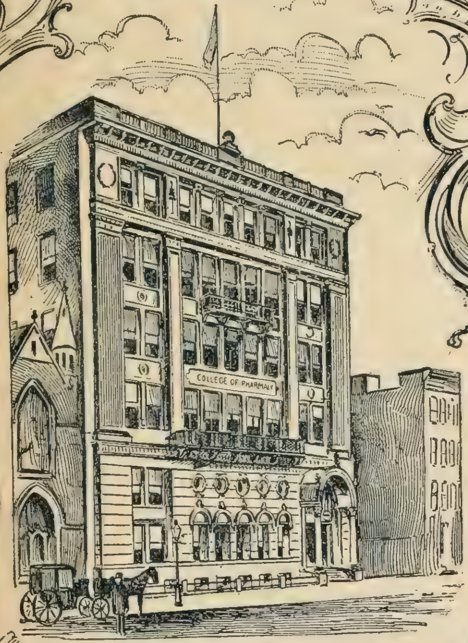
JEALOUSY is always a sign of weakness and is usually directed against one who is stronger or gives promise of being so. Men who are not willing to accept facts presented by others, and will not weigh the conclusions that have been based upon them, are not the men who will make advances themselves, nor will they be helpful to others who would. A bigot knows not enough to know that he does not know it all, and, therefore, always stands ready to destroy anything that does not emanate from a source peculiarly his own.

THE Alumni Journal

Entered at the New York Post Office as second class matter.

VOL. III. No. 12

December, 1896.



Contents:

IN MEMORIAM OF ALFRED H. MASON Ph. C., F. C. S. - - - - - 297
FIRST AID TO THE INJURED, - 299
By A. ERNEST GALLANT, M.D.
MEDICINE AND PHARMACY, - 302
By PROF. CRUM BROWN.
NEW METHOD FOR QUANTITATIVE ISOLATION OF ALKALOIDS, - 304
PRESERVATION OF MUCILAGES AND PASTES, - - - - - 305
By FREDERICK LESTER.
THE PRODUCTION OF INOCULATING MATERIALS, ETC., - - 306
EGYPT AND GUM ACACIA, - - 306
A SIMPLE METHOD FOR OBTAINING A LOW TEMPERATURE, - - 307
THE MANUFACTURE OF CHLORINE. 308
By DR. LUDWIG MOND, F. R. S.
EDITORIAL, - - - - - - - 315
NEW FOREIGN LITERATURE - - 316
MISCELLANEOUS NOTES, - - 317
ALUMNI ASSOCIATION, - - 320
ALUMNI NOTES, - - - 320
CLASS NOTES—'93 Notes, - - 321
" " '94 " - - - 322
" " '95, '96 Notes, - - 323
POST GRADUATE NOTES, - - - 324
N. Y. C. P. CYCLERS, - - - 324

PUBLISHED BY

THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY

. . . . OF THE CITY OF NEW YORK . . .

THE SECOND ANNUAL BALL

TO BE HELD UNDER THE AUSPICES OF THE

ALUMNI ASSOCIATION

OF THE

College of Pharmacy of the City of New York,

TO BE HELD AT

Madison Square Garden Banquet Hall,

ON WEDNESDAY EVENING, JANUARY 20th, 1897.

See ALUMNI JOURNAL for January for further particulars.

Excepting the Colonial Churches,
Oldest Stand on Broadway, N.Y.

TRINITY CHURCH 1697
MILHAU'S PHARMACY
183 BROADWAY
NEW YORK.
ST. PAUL'S CHAPEL 1764
TRADE MARK

Cable "Milhau." Telephone 3780 Cortlandt.

THE "ANIMAL EXTRACT CO.S'"

Brain Extract,	for Brain, Nerves, Hysteria, etc.
Heart do	for Heart troubles, Dropsy.
Medulla do	for Epilepsy, Locomotor-Ataxia.
Ovaries do	for Diseases of Women, Sterility, etc.
Testes do	for Nervous Debility, Impairment, etc.
Thyroid do	for Obesity, Goitre, Skin, etc.

Positively guaranteed as the only brand always strictly according to ***Dr. Hammond's*** published formulas. $100 forfeit if not. Confidently claimed to equal those used at the Hammond Sanitarium.

J. MILHAU'S SON, Druggist,

183 Broadway, N. Y.

Mailed $1. Circulars Free.

Mention this Journal.

DR. DÉCLAT'S

ANTISEPTIC METHOD

In Tuberculosis, Malarial Fevers, Diphtheria,
Zymotic diseases, Cancers, etc.

HYPODERMIC INJECTIONS, SYRUPS, ETC., OF

Nascent Phenic Acid, antiseptic.
Ammonia Phenate, antipyretic.
Sulpho=Phenique, for chronic cases.
Iodo=Phenique, alterative, resolvent.
Pheno=er, assimilable iron tonic.
Phenated Cod Liver Oil, nutrient.
Syr. Amm. Phenate Co., for whoop. cough.
Glyco=Phenique for gargle, spray, wash.

In 1869 and 1870 **Dr. Declat** filed reports, Paris, on hypodermic injections of **Phenic Acid with Pilocapine,** etc.

Formulas published.
Medals for superiority of phenic acid.
Medical Reports on mentioning this Journal.

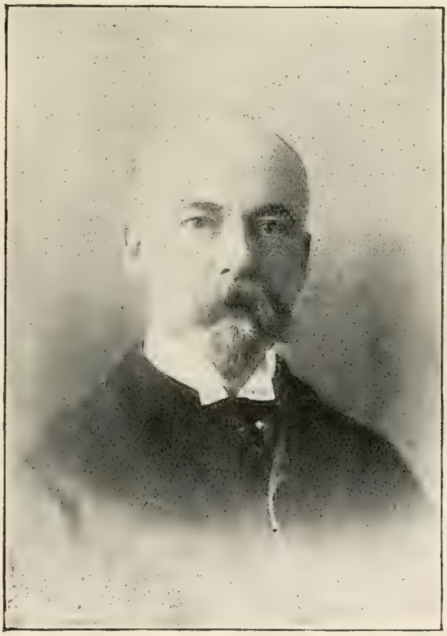
J. MILHAU'S SON, New York.

Agent for the Déclat Manufacturing Co.

THE Alumni Journal

PUBLISHED BY THE ALUMNI ASSOCIATION
OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK

Vol. III. **New York, December, 1896.** **No. 12.**



ALFRED H. MASON, Ph. C., F. C. S.

By the death of Mr. Alfred Henry Mason, which occured on November 2d, the New York College of Pharmacy and its Alumni Association, was robbed of one of its most devout and enthusiastic members, one to whom no task was to colossal, but on the contrary, the most ardous ones were handled with the utmost ease and good nature.

Mr. Mason although a comparatively recent arrival in this country, had by his good nature, winning ways and intelligence endowed himself dearly among a host of friends, on whom the loss will fall heavily.

He was born at Newcastle on Tyne in 1843, and began his pharmaceutical career at the age of 14, when he was apprenticed to a Mr. Marston, chemist and druggist in Stafford, England, here a premium of £100 was paid when the indenture was signed, and the preliminary pharmaceutical education began, which consisted of washing bottles, scrubbing the floor, etc., this rudiment of business was customary before the more responsible work was attempted. For these services the master furnished him with board.

A habit of existing was contracted, which continued to be a marked characteristic in after years. At the completion of his apprenticeship, Mr. Mason was ready to take an assistant's place. In this capacity he did so well, that a position of manager in one of the largest establishments in Liverpool was offered and accepted. In 1866, or nine years after his apprenticeship, he entered the wholesale trade, here his progress was rapid, rising from one position to another, until 1884 when he came to Canada to assume the management of the business of H. Sudgen Evans & Co., of Montreal. The firm was incorporated and Mr. Mason was taken in, forming the firm of Evans Sons' & Mason. In 1888 the firm was dissolved by the retirement of Mr. Mason. In 1892 he was made a stockholder and secretary of the Seabury and Johnson Corporation, and was subsequently their British agent. A year later he returned to New York, where he retained his position as secretary, which was practically manager, until his death.

His personal popularity was attested when he left London, by the farewell dinner given to him by sixty of his friends in December 1892, the gathering consisting of England's greatest chemists. He identified himself with the American Pharmaceutical Association, and at one time was Chairman of the Committee on the Drug Market. He was also a member of the Wholesale Druggists' Association, where he did some valuable committee work. Mr. Mason was on the Executive Committee of the Pharmaceutical Association of the Province of Quebec; in 1887 he was elected President of the Montreal College of Pharmacy; where he founded the Students' Association. In 1893 Mr. Mason became a member of the College of Pharmacy of the City of New York, one year later joining the New York State Pharmaceutical Association; in 1894 the charter of the College was amended, creating the office of Assistant Secretary. Mr. Mason was unanimouly elected to the office, which he held until the death of Secretary, Mr. J. N. Hegeman, when he succeeded the latter as Secretary. In March last he was re-elected unanimously. Since his connection with the College, he had always taken an active interest in the Alumni Association, all the social features such as the Ball, Outing, etc., always found him present with his family. In fact on Alumni Day, this year he sang two selections, and received repeated encores.

In April 1896 he was elected both honorary member of the "Alumni Association" and editor of the ALUMNI JOURNAL. His ability in the latter is evidenced by the rapid strides the "JOURNAL" was making to success when death overtook him.

Mr. Mason was a prominent member of the "Liverpool Chemists' Association," also a "Fellow of the Chemical Society" and the first chairman of the New York branch of the Society of Chemical Industry, St. George's Society, secretary of the New York College of Pharmacy, and honorary member of its Alumni Association.

His funeral took place Nov. 4, at 4 P.M., from St. Michael's Church, this city. The Rev. George S. Pratt, assistant rector, officiated, according to the rites of the Episcopal Church. Following the rector up the aisle came the black covered casket, borne on the shoulders of six young men. Closely following were O. J. Griffiin, assistant secretary of the College of Pharmacy, Miss Margerie Mason, (Mrs. Mason was unable to attend owing to illness), John McKesson, Dr. Charles F. Chandler, T. F. Main, John R. Caswell, Thomas J. Macmahan, and others. The College was represented by Dr. Virgil Coblentz, Professors George A. Ferguson, John Oehler, and Dr. George C. Diekman, Richard J. Reilly and Harry B. Ferguson, George B. Wray, of Yonkers, Edward Kemp, president of the College, S. W. Fairchild. Members of the Alumni Association present were Arthur C. Searles, President, Secretary Hoburg, Treasurer Henning, Nelson S. Kirk, H. A. Herold, Eugene Lohr, Julius Tannenbaum, Rudolph Gies.

The body was interred in the Moravian Cemetery, at New Dorp, Staten Island.

FIRST AID TO THE INJURED.*

By A. Ernest Gallant, M. D.

Examiner for the Society for Instruction in First Aid to the Injured, New York.

"Friendships blind service in the hour of need,
  Wipes the pale face, and lets the victim bleed;
Science must stop to reason and explain,
  Art clasps his finger on the bleeding vein."

The Babylon express has left Garden City behind. After the heat and turmoil of a hot summer's day in the city, how cool and refreshing the air, how grateful to the eye the long flower-beds on both sides of the track. A sense of quiet restfulness steals over us, occasionally broken by the musical hum of a blood-thirsty mosquito. What was that? Get off the track! Down brakes. The engine reverses and the train comes to a sudden standstill. Walking back a short distance, we find a group of fellow passengers gazing at a poorly dressed man, bleeding from the scalp, moaning, mumbling, "only a tramp." The skull is fractured at the base, the leg broken; he cannot live. The train backs, the body lifted into the baggage car, and we are once more on our way. How many of the onlookers realized their utter helplessness to render aid under similar circumstances. It is my purpose to point out the proper thing to do in fracture cases.

FRACTURES—HOW TO HANDLE THEM.

Injuries resulting in broken bones without damage to the skin are designated *simple* fractures. On the other hand when the skin has been lacerated with or without exposure of the subjacent structures, they are classified as compound fractures.

When called upon to render assistance in a case of a compound fracture, the injury must be treated as described in a lecture on "Wound Treatment," Alumni Journal, vol. II, 1895, page 118, viz.: Cut away the clothing, stop the bleeding by thumb pressure, figs. 29, 38, 39, a pad, fig. 37 or the improvised tourniquet, figs. 30–40. If the wound is dirty allow water to trickle over it, then apply on a bunch of absorbent gauze a mixture of

Bals. Peru. Mxxx
Ol. Ricini ʒi

the oily side to be placed directly over the wound. Cover the dressing with oil silk or rubber tissue, and fix in place with a triangular bandage, figs. 7 to 16, then put on a splint as for a simple fracture.

UNCONSCIOUSNESS.

To restore to consciousness apply smelling salts or ammonia to the nose, rub the legs briskly toward the body, loosen the clothing around the neck and waist in order to facilitate breathing. As soon as the patient can swallow give whiskey or brandy *in very hot water*, about one ounce in eight; the hot water acting more promptly and replaces the blood lost from the system.

Do not give stimulants when the head has been injured.

Apply heat to the body; hot water bottles, placed outside the blankets, hot bricks around the body and between the legs, heat in any form, will aid in overcoming the effects of the injury.

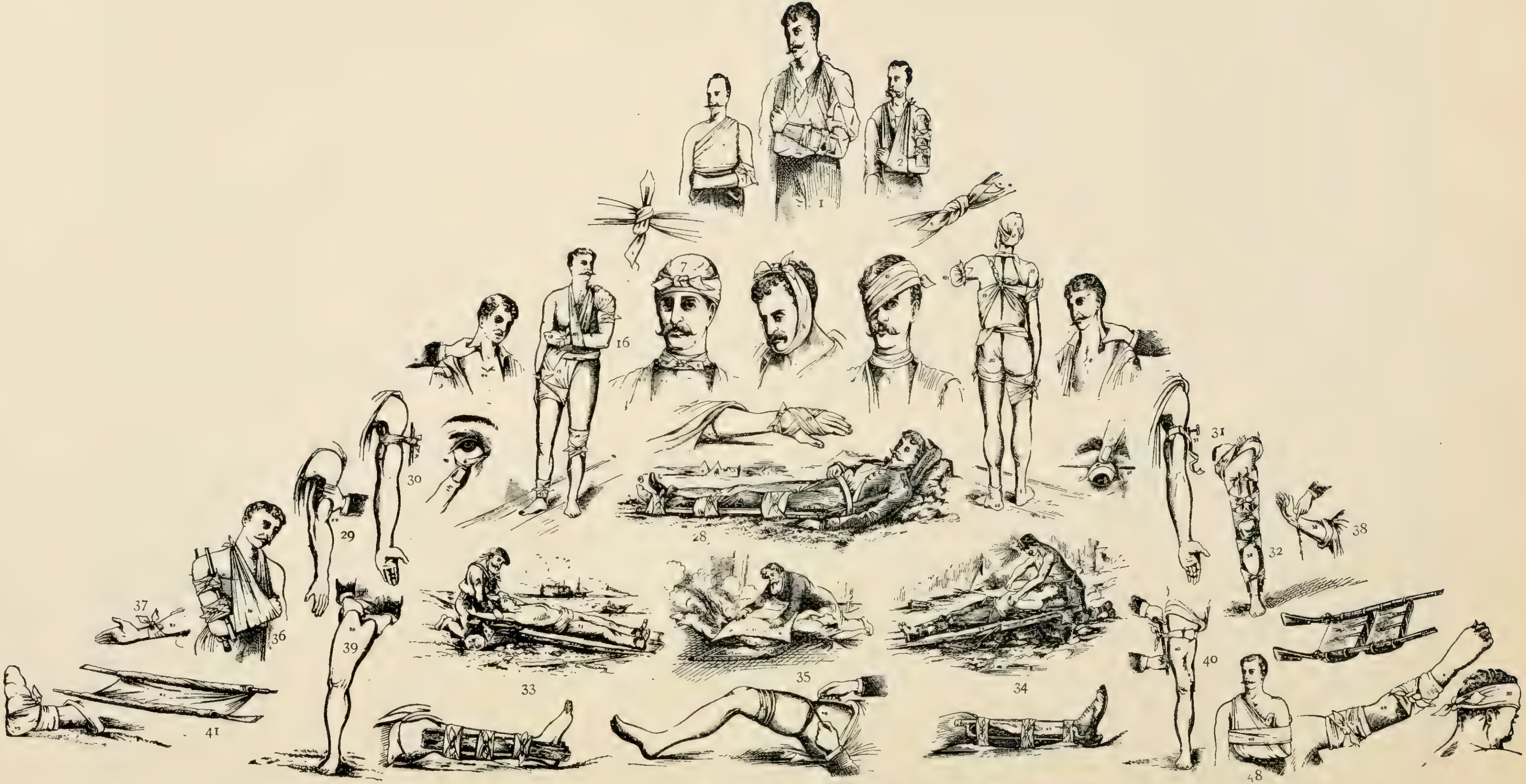
FRACTURES.

When a limb has been broken, splints must be applied to avoid causing pain and further injury. Any material which will prevent the ends of the bone rubbing together or protruding through the skin, such as a strip of cigar-box, soap-box, card-board, newspapers, tin, tree-bark or fence rail will answer. Splints should be about the same width as the limb.

A splint for the hand, wrist or forearm should be placed on the back of the forearm long enough to extend from the finger-tips to the elbow, and the arm supported in a sling, fig. 1.

---

*Delivered before the Alumni Association of the New York College of Pharmacy November 11th, 1896.



BANDAGE FOR FIRST AID IN ACCIDENT.

For the upper arm the splint should reach to the shoulder, figs. 2 and 36.

In the leg the splint should reach above the knee and be placed on the back or outer side, fig. 38.

When the thigh or hip is broken, the splint must reach from the arm-pit to the heel, fig. 28.

Fill in *the hollows* between the limb and the splint so as to prevent bending and pain when the bandages are tightened.

Bandaging splints. Bandages should be tied on in the following order, viz.: the highest first, the lowest second, the third, fourth and fifth above and below the break if needed. Do not tie a bandage directly over the point of fracture.

One splint can be more easily and firmly applied than two.

Never use force to straighten or replace a broken limb.

DISLOCATION AND SPRAINS.

Bones which have been forced from the socket must be replaced by a surgeon. Adjust a sling, the ends being carried over the shoulder as in fig. 16, and made to embrace the whole arm, fig. 1, where it can remain until a physician can "set the bone." For sprains, put on a splint as for a fracture in the same region. If very painful immerse in very hot or ice water.

CARRYING THE INJURED.

To transport an injured person, in lieu of an ambulance or wagon, we must resort to an improvised litter or stretcher, fig. 48, a door, shutter, or two boards nailed together can be made to answer. The simplest stretcher, devised by the writer, can be made from a blanket, sheet or quilt, and two poles or sticks about seven feet long. Spread the blanket out flat. Place the two poles across the blanket so as to divide it into three parts. Fold the two sides over the poles (do not roll as in fig. 41), so that the first fold covers the central portion of the blanket, and the second lap covers the first. Place the patient directly on the blankets between the poles, and his weight will press the folds together and prevent slipping. No fastening of any sort is necessary.

"Augusta was a maiden fair, but very proud and rich,
She didn't do much domestic work, and never sewed a stitch ;
But she took up the "First Aid" craze, and all that sort of thing,
She knew the way to set a bone and how to make a sling.
Now, Edwin was an ill paid clerk, as clerks not seldom are,
And so, though he Augusta loved, he worshipped from afar;
In truth, he knew her just by sight—this fact he did deplore,
And therefore, hit upon a plan to get to know her more.
"She's in the ambulance of course; ah, that will do for me,
I'll lie in ambush at her door and be a 'case' said he;
So on a stile which she must pass for some hours he did sit,
And when she neared him, suddenly he tumbled in a fit,
But fits were not Augusta's forte, she saw him as he lay,
'Oh, what a horrid man' she gasped, then screamed and ran away,
Now, Edwin's knowledge of disease was hazy to excess,
And of this one impromtu fit he made a grievous miss.
For as he lay and writhed and groaned, Augusta's ear to win,
A young policeman passed that way, said "Drunk," and ran him in;
The magistrate who tried the case had never learned 'First Aid,'
So no defense was any good, the fine was meekly paid."

TIB-BITS.

THE Society extends a cordial invitation to the alumnæ, the students, their sweethearts, wives and their friends, to form classes of from 10 to 20 persons, to meet for instruction in the regular course of five lessons and an examination. You can arrange to meet at the college, your homes, or the rooms of the Society, 105 E. 22d street.

MEDICINE AND PHARMACY.*

By Prof. Crum Brown.

There is not in modern English any one word to indicate a member of the medical profession. It was not always so. There is an excellent old English word—"leech"—which at one time corresponded exactly with the French "médecin" or the German "Arzt." Applied at first no doubt in a sort of joke to a humble assistant it had come to be practically restricted to its secondary meaning, so that it sounds both familiar and contemptuous for any one now to call a medical man a "leech." Possibly the loss of the common name in English had some relation to the loss, more marked in England than anywhere else, of the sense of a common profession. Hood has told us that—

> "In many a little country place
> It is a very common case
> To have but one residing doctor,
> Whose practice rather seems to be
> No practice but a rule of three,
> Physician, surgeon, drug-decocter."

To him and no doubt to most Englishmen of that time, unity of the healing art depended on the small size and poverty of the place where it was exercised, just as he might have said that in such a small out-of-the-way place the merchant sold nails and hats, and soap and bacon. The work of the physician and that of the surgeon seem to have been regarded as distinct from each other, just as the work of the tailor and the shoemaker. It is possible without difficulty to draw the line between the respective spheres of the tailor and shoemaker, and the one artificer can do his work quite well, although he may be wholly ignorant of the craft of the other. But we cannot draw a line between any two branches of the healing art. No doubt fevers belong to the physician and fractures to the surgeon, but between such extremes there lie a vast number of disorders which cannot well be treated without both kinds of knowledge and skill. "The body is one and hath many members, and if one member suffer, all the members suffer with it." And as there is to be no schism in the body so there should be no schism in the profession which looks after the health of the body.

But in England something like a schism in the profession has taken place. Although it had been declared by Act of Parliament, in connection with the College of Physicians, that surgery was a part of physic, it came to pass that the College of Physicians would not admit to their body a surgeon, however eminent he might be in what was called pure medicine, unless he resigned all connection with surgery. And the College of Surgeons, although their charter included medicines, received as members men who had not, for anything the College knew studied medicine or midwifery at all, and examined in anatomy and surgery only with perhaps a few questions on physiology and pathology. This sufficiently explained Hood's "physician and surgeon." His "drug decocter" was of course the apothecary. This word, literally keeper of a storehouse, early came to be restricted to the seller of drugs. Very naturally the seller of drugs began to tell his customers what to do with them, and thus gradually unsurped medical duties and privileges. Pope, in his essay on criticism, published in 1711, wrote.—

> "Modern 'pothecaries, taught the art
> By doctors' bills to play the doctor's part,
> Bold in the practice of mistaken rules,
> Prescribe, apply, and call their masters fools."

The position thus gradually assumed was contested by physicians and surgeons, but was declared legal by the House of Lords in 1703, and in 1815 the Apothecaries' Society obtained by Act of Parliament the right of examining and licensing candidates who have gone through a course of medical examination approved by the Society. After that time the majority of the general practitioners of England practiced with licenses in medicine from the Apothecaries' Society, and in surgery from the Royal College of Surgeons of London (afterward of England), or with the surgical diploma only. But it is not to be supposed that our brethren in England were really divided into separate professions as their formal classification seemed to indicate. Whatever their titles may have been the English general practitioners of the last generation were able to acquire, and did acquire, a sound practical knowledge of all branches of their profession, and anomalous as the system was, it produced a good deal of good fruit. The Medical Act of 1858, and the General Medical Council which the Act created, had put an end to partial qualifications, and the unity of the profession was as fully recognized in England as in any part of the world. The old names survived with, perhaps, some trace of the old ideas.

---

* From the Inaugural Address to the Edinburg Royal Medical Society.

The title of "apothecary," or member of the Apothecaries' Society, rather more than suggests the "drug decocter." Undoubtedly in "little country places" the medical man must often make up his own prescriptions. There may be no druggist near him, and even if there be, if he has to ride ten miles to see his patient he can hardly expect that his patient will always be able to send ten miles for his medicine. But many a medical man makes up his own medicines without so good an excuse. It is a pity that his time should be taken up with his work which is the business of another profession, and could be done more easily and better by the pharmacist having trained skill. In case of necessity an intelligent man can turn his hand to anything, and if the necessity continue, can learn to do it very efficiently, but when an expert is to be had it is better to let him do the work. It is not because they like it that many general practitioners thus add unnecessarily, as they would say, to their work. It is because their patients will have it so. If they abandon their pharmacy their practice is not unlikely to abandon them. We can only hope that as the public has learnt or is learning, that the medical profession is one, so they may gradually find out that the pharmaceutical profession is another. We may then hope that each of them, really distinct professions, will restrict itself to its own duties. Things are indeed better now than they were. Respectable skilful men were to be found not long ago who kept shops, where they or their assistants sold across the counter, not to their own patients only but to anybody, not only medicine, but tooth-brushes, sponges, scented soap and so on. The unity of the medical profession is indeed securing its distinctness, and the consciousness of unity is raising its position and its tone.—*Phar. Jour.*

HYDROGEN DIOXIDE FOR DETECTING TARTARIC ACID IN CITRIC ACID.

ADD one Gm. of citric acid to be examined, to one Cc. of a 10 per cent. solution of ammonium molybdate. Upon heating the mixture a blue coloration may show itself. Cool, and add 5 Cc. of a 25 per cent solution of hydrogen dioxide. If the citric acid is adulterated, an intense yellow coloration ensues, whether the mixture is warmed or not. The color is persistent, and is not observed with perfectly pure citric acid.

The method, it is reported, will indicate the presence of as little as 1 per cent. of tartaric acid.—*Merck's Report.*

It will pay you to subscribe to the ALUMNI JOURNAL.

NEW METHOD FOR QUANTITATIVE ISOLATION OF ALKALOIDS.

The following is the method proposed by Dr. Kippenberger in the Zeitschrift für analyt. Chemie. The alkaloids are precipitated from their solution even to the last trace, by a solution of iodine in potassium iodide. To remove any protein or foreign substances which might be carried along with the precipitate, it is dissolved in acetone and any free precipitated iodine removed by treatment with caustic soda or potassa. From the colorless solution the alkaloid is removed by shaking with ether or chloroform. The details are as follows: The alkaloid is extracted from the substance to be examined by means of acidulated water; this solution is then neutralized or made feebly alkaline and at once precipitated with a concentrated solution of iodine in potassium iodide. The precipitate, after allowing to settle for awhile, is collected on a (water dissolves the double salt), followed by a small volume of acetone, which dissolves the precipitate, yielding a brown-colored solution. This solution is treated with a small amount of an alkali hydroxide followed at once with an acid in slight excess, diluting with water. The resulting colorless solution which contains the alkaloids in form of acid salts is carefully warmed on a water bath to drive off the acetone (which boils at 56° C), then a few drops of solution of sodium hyposulphite are added while still warm, to remove any brown coloration. To the liquid a slight excess of sodium carbonate solution is added and the whole shaken with cloroform for the extraction of the alkaloid. It is to be understood that if morphine or narcein is present it is to be removed by extraction with amyl alcohol. Glucosides do not react with iodo-potassium iodide, hence this method serves for the separation of the two classes of bodies.

Kippenberger recommends this method in place of Keller's for the assay of alkaloidal drugs, extracts, etc., the procedure being as follows: The extract which is to be assayed is dissolved in warm acidulated water, filter if necessary, when cold render it almost neutral and then precipitate the alkaloids with the solution of iodine in potassium iodide. This latter solution is best prepared by dissolving from 12.7 to 20 gm. of iodine with about 60 gm. of potassium iodide in a liter of water. After settling, the precipitate is collected upon a filter, washed with cold water. As soon as the wash water runs through clear, the precipitate is dissolved in the smallest possible quantity of acetone, which is treated alternately with a solution of caustic alkali and an acid, then diluting with water, after which it is shaken with petroleum ether (30°—50° C.) The addition of caustic alkali solution serves to combine the free iodine as iodide and iodate, and the acid decomposes the iodate into free iodine and a salt of the alkali. The agitation with petroleum ether serves to remove any impurities that may be present, also most of the acetone, however not even traces of the alkaloid are taken up by this solvent. The petroleum ether also serves to remove the traces of iodine, which are liberated on the addition of the acid to the iodate. This extraction by agitation is repeated twice and the mixed petroleum ether washings are shaken with a small quantity of acid diluted water, which is returned to the original solution. The mixed acid aqueous solutions are slightly warmed to remove the traces of dissolved acetone and petroleum ether, then a few drops of — solution of sodium hyposulphite added, followed by an excess of sodium carbonate solution, the whole being then shaken with either chloroform, ether or a mixture of both, which extracts the alkaloid. Emulsions of the chloroform frequently result during agitation; these may be separated by warming or adding one-third the volume of ether.—*Pharm. Era.*

PRESERVATION OF MUCILAGES AND PASTES.

By Frederick Lester.

Considerable has been written from time to time about preservation of mucilages and pastes.

With a view of overcoming this difficulty I began a line of experiments.

Experiment No 1,—(Date, January 20, 1896).—Mix 8 ounces of flour and 4 pints of cold water, and stir till free from lump, add one-half ounce of pulverized alum, stir thoroughly and place in the water-bath and boil till of proper thicknes; then transfer to an earthenware jar, and when cool stir in one-half ounce of a 40 per cent. solution of formaldehyde. This has stood from the time made till May 10, in the jar, covered but not sealed, and at present writing I am using this paste as sweet and in as good condition as when first made.

Experiment No. 2.—Take of gelatin, 1 ounce; flour, 4 ounces; water, 3 pints; formaldehyde, ⅜ ounce. Cover the gelatin with one pint of water and allow it to soften, then heat to dissolve, mix this with the flour and 2 pints of water previously made into paste, and boil them. When cool mix with the formaldehyde. This paste at the end of sixty days showed no signs of spoiling, being fresh and sweet, although it had been exposed to a summer temperature all the time. Still, it was necessary to keep it covered when not in use. A portion that was left uncovered for a week became watery.

Experiment No. 3.—Mix starch, 2 ounces, and water, 16 ounces and make a paste by heating. When cool add ¼ ounce of formaldehyde. This was made on the same day as No. 2 and subject to the same conditions. It is in perfect condition at the present writing.

Experiment No. 4.—Mucilage of acacia U. S. P. was made and one per cent. of formaldehyde added. This has now been standing for two months in a warm place and show no signs of fermentation.

These experiments covered the entire ground that I had intended to cover and, demonstrated beyond question the preservative effect of formaldehyde. But wishing to extend my researches still further, the following experiments were made:

Experiment No. 5.—Make a thick paste from white dextrim, 4 ounces; and water, as much as required. Then add 8 ounces of flour paste made as in experiment No. 1, and ¼ ounce of formaldehyde. This has been setting on on the shelf for more than forty days and is as sweet as when first made.

Experiment No. 6.—To paste made as in No 5, but half the quantity of formaldehyde was added. This kept equally well. Thus it can be readily seen that by the use of formaldehyde paste or mucilage can be kept for months. Experient No. 1 shows a flour paste good after six months' standing. Part of it was placed in an open jar for use and remained sweet till used up. The rest was placed in a covered jar and is as nice at this writing as when first made. Most of these experiments were made with covered jars, but no effort was made to seal them. They were placed on the shelf and subject to the warm summer atmosphere of the room.—*W.D.* Reprinted from the *Mont. Phar. Jour.*

M. K. Olszewski has found that helium cannot be liquified by the most powerful methods yet available. It is more permanent than hydrogen, probably owing to its monatomic structure, and is on that account valuable as a thermetric substance at very low temperatures. A comparison of a helium and a hydrogen thermometer shows, however, that hydrogen has normal expansion as far as —234.5° C., its critical temperature, and is therefore available for thermometric use down to that point.—*Scien. American.*

THE PRODUCTION OF INOCULATING MATERIALS FOR USE IN AGRICULTURE (NITRAGIN).

At a meeting of the Society of Chemical Industry, London Section, Dr. J. A. Voelcker, Consulting Chemist to the Royal Agricultural Society of England, read a paper on the above subject.

Dr. Voelcker first briefly referred to the well-known, but for many years unexplained fact that leguminous crops (peas, beans, vetches, clover, etc.), though highly nitrogenous do not impoverish the land of nitrogen to any perceptible extent; indeed, when the stubble is ploughed in after cropping, as is usually the case, the soil is found to be richer in nitrogen than before cropping. Hellriegel and Urllfarth's experiments, in which it was found that though seeds of leguminous plants in sterilized sand, watered only with solutions of mineral fertilizing constituents, died soon after germination, whilst when a small quantity of the watery extract of a soil on which such plants had flourished healthy growth with formation of characteristic root-nodules ocurred, showed that nitrogen must be assimilated from the air presumably by the aid of these nodules.

Dr. Noble has been able to isolate from these roots nodules the specific organism or bacterium, which is instrumental in the assimilation of nitrogen—in fact, he finds that the various families of the order *Leguminosæ* have each their modification of the organism which best effects the action—probably the result of a process of natural selection during several generations. With the energy and far-seeing wisdom which characterizes the trade in Germany, the Farbwerke von Meister, Lucius and Brüning, of Hœchst on Maine, have devoted an entire department to the commercial utilization of these discoveries, and are now selling at 2 m. 50 pf. (2s. 6d.) per bottle, sufficient to inoculate seed or soil for half an acre of land, pure cultures of the bacterium under the somewhat unfortunate, so far as we are concerned in England, name of "Nitragin."

Dr. Voelcker described briefly, experiments made rather late in the present unfavorable year, at a farm in Sussex, at the Woburn Experimental Farm of the R. A. S. E., at Moxhull Park, Warwickshire, and at Reading (under the superintendence of Messrs. Sutton & Sons), and though deprecating hasty conclusions expressed his opinion that nitragin would probably be found of use in lands where leguminous crops could not otherwise be grown. The experiments will be continued for some years. —*British and Colonial Druggist.*

EGYPT AND GUM ACACIA.

In March of this year we briefly dealt, as our readers are aware, with the effects of the Egyptian disturbances on the trade in gum arabic. It will be remembered that the gum auctions of March 26th, showed a material rise in the price of this gum, which change was attributed to the influences exercised by the disturbances in Egypt, then becoming talked about. We said then—and the course of gum arabic up to now has justified our opinion—that the political situation had been worked on more than was warranted, and that the prices obtained at the sales referred to were largely moves in the game of speculators. In public, the sellers of gum arabic have continued to maintain apparently a firm attitude; but the sales at each auction have been proportionately very small, and our private information is to the effect that a retail character also is shown in business outside the auction room, while a tendency to give way to buyers has been becoming more apparent of late.

Whether the effects of the disturbance have really resulted in so large a curtailment of the supplies, which otherwise would have reached the coast, as was expected, is to be doubted. The figures returned by the various warehouses here do not assist one very much in comparing the stocks of Soudan gum in London at various periods. This is owing to the fact that all kinds of gum arabic are grouped together. Compared thus, indiscriminate of kind, the stocks of gum arabic over here have been larger since the rise in March than they were at corresponding periods of last year. This is apparent up to the end of last month, and helps to bring about the result which is to be expected from the latest news from the seat of war.

An important trade emporium is, according to Reuter, in contemplation by Colonel Hunter, at Dongola. To the centre thus afforded caravans will come from Darfur and Kordofan, bringing, among other things, gum. By passing through Dongola, says the report, the canal and the Khalifa's duties will be avoided. It is further understood that direct steamer and railway communication will be established. As Dongola forms an excellent centre for the districts producing the best gum acacia, these facilities for its exportation should very quickly affect the price of the article, and will soon lead to its cheapening unless some set-back occurs to the British expedition, which is not expected or probable. The further advance of the expedition to Khartoum, if this takes place, will act further in the same direction. In fact, Khartoum is nearer, as anyone acquainted with the map knows, to Kordofan, which gives the finest gum, than to Dongola, and lies in the route from the Kordofan district to El Dabbeh, whither much of the fine gum has gone on its way to Egypt.

That this result will follow from the proposed emporium is denied by some of the importers, who urge that until Khartoum is reached the gum routes cannot be considered as open, and who also point to a natural failure of supplies, through excessive rains, as likely to keep prices up.—*British and Colonial Druggist.*

German Pharmaceutical Society.—Dr. Dieterich, at the October meeting of this society, read a paper "Considerations on the Improvement of Methods of Testing Resins." 1, Peru balsam; 2, ammoniacum. In the case of the former he considers it desirable to estimate (1) the specific gravity (2) test according to the German Pharmacopœia; (3) estimate the "saponification number," using strong alcoholic potash and petrol benzine in the cold; determine (4) the acid number; (5) the matter insoluble in ether; (6) the amount of resin and cinnamein; and (7) the ester-number. From these figures he obtains a fair idea as to the purity of a sample. The saponification value should be 218-259; the acid value, 68-80; the matter insoluble in ether, 1.5-3. per cent., and the proportion of resin to cinnamein, 1 : 2 to 1 : 5. Figures outside these limits point to sophistication. In ammoniacum, besides the official tests, he estimates the loss at 100 per cent. the ash, saponification, resin, gum and acid values. Dr. H. Thoms, Privatdocent of the University of Berlin, read at the same meeting a paper on toxicological work. He finds a modification of Kippenberger's chloroform method of extracting alkaloids, using acetic ether instead of chloroform to give good results. He describes compounds of mercuric chloride (used to precipitate), with caffein and antipyrin. The work was undertaken in conjunction with his pupils. He also read further papers on "The Examination of Dulcin," and on "The Analysis of a Spurious Mark Piece (1s.)," in which he found 35.45 per cent. tin and 65.77 per cent. antimony.—*British and Colonial Druggist.*

It will pay you to subscribe to the ALUMNI JOURNAL.

A SIMPLE METHOD FOR OBTAINING A LOW TEMPERATURE.*

By C. Edward Sage, F C S.

Having frequent necessity to observe the behavior of oils and fatty acids at a low temperature, I have been led to construct a simple piece of apparatus which enables one to reduce the temperature of a sample in a very short space of time.

A six-ounce wide-mouthed flask, or bottle, is fitted with a good cork, which is to be pierced with three holes, one of which is to be large enough to admit a test tube; the other two are for the admission of two glass tubes. The inlet tube passes to the bottom of the flask, and the exit one passes only a short distance through the cork. The flask is partially filled with ether, and the sample to be examined is placed in the test tube together with a thermometer. Air is now forced into the flask by the inlet tube and made to bubble through the ether, whereby it exposes a large surface for evaporation, and as this takes place very rapidly the latent heat absorbed soon reduces the temperature of the sample. Instead of forcing air through the inlet tube the exit may be attached to a Sprengel pump and the air sucked through. To prevent the waste of ether as far as possible, it is preferable to attach the exit tube to a condenser, through which water is running, and to wash the air sucked through by means of cold water in a wash bottle ; this water will, on subsequent warming, yield a small quantity of ether, but the larger proportion is kept back by the condenser. I have had several of these freezing bottles in use during the past summer, and found no difficulty in maintaining a temperature of 4° to 5°C, for a long period even during the hottest weather, and if test tubes were filled with water, it was converted into ice in a few minutes, with the expenditure of very little ether.—*Phar. Jour.*

BOARD OF PHARMACY.

At the last examination, held Nov. 9, the following applicants passed ; C. C. Heffley, Emil Paarmann, A. G. Shoppach.

During the month twenty-nine pharmacists were registered. The next examinations will be held on Dec. 14, at 9 A.M.

---

* A paper read before the Chemists' Assistants Association of London.

THE MANUFACTURE OF CHLORINE.

By Dr. Ludwig Mond, F.R.S.

(*Continued*)

The process has been at work at St. Rollox for over fifty years, and, as far as I know, is there, still in operation, but I am not aware that it has ever been taken up elsewhere.

Within the last few years, however, several serious attempts have been made to give to this process a wider scope by regenerating nitric acid from the nitro-sulphuric acid and employing it over and over again to convert hydrochloric acid into chlorine. Quite a number of patents have been taken out for this purpose, all employing atmospheric air for reconverting the nitrous oxides into nitric acid, and differing mainly in details of apparatus and methods of work, and several of these have been put to practical test on a fairly large scale in this neighborhood, and also in Glasgow, Middlesbrough and elsewhere. As I do not want to keep you here the whole afternoon I have to draw the line somewhere as to what I shall include in this brief history of the manufacture of chlorine, and have had to decide to restrict myself to those methods which have actually attained the rank of manufacturing processes on a large scale. As none of the processes just referred to have attained that position, you will excuse me for not entering into further details respecting them.

Mr. Dunlop's process only produced a very small portion of the chlorine manufactured at that time at St. Rollox, the remainder being made, as before, from native manganese and muriatic acid, leaving behind the very offensive waste liquors I have mentioned before, which increased from year to year, and became more and more difficult to get rid of. The problem of recovering from these liquors the manganese in the form of peroxide, Mr. Dunlop succeeded in solving in 1855.

He neutralized the free acid and precipitated the iron present by treating these liquors with ground chalk in the cold and settling out, and in later years filter-pressing the precipitate, which left him a solution of chloride of manganese, mixed only with chloride of calcium. This was treated with a fresh quantity of milk of chalk, but this time under pressure in closed vessels provided with agitators and heated by steam, under which conditions all the manganese was precipitated as carbonate of manganese. This precipitate was filtered off and well drained, and was then passed on iron trays mounted on carriages through long chambers, in which it was exposed to hot air at a temperature of 300° C., the process being practically made continuous, one tray at the one end being taken out of these chambers and a fresh tray being put in at the other end. One passage through these chambers sufficed to convert the carbonate of manganese into peroxide, which was used in place of and in the same way as the native manganese.

The whole of the residual liquors made at the large works at St. Rollox have been treated by this process with signal success for a long number of years. For a short time the process was discontinued in favor of the Weldon process (of which I have to speak next), but after two years Dunlop's process was taken up again, and, to the best of my knowledge, it is still in operation to this day. It has, however, just like Mr. Dunlop's first chlorine process never left the place of its birth (St. Rollox), although it was for a period of over ten years without a rival.

WELDON'S PATENT PROCESS.

In 1866, Mr. Walter Weldon patented

a modification of a process proposed by Mr. William Gossage, in 1837, for recovering the manganese that had been used in the manufacture of chlorine. Mr. Gossage had proposed to treat the residual liquors of this manufacture by lime, and to oxidize the resulting protoxide of manganese by bringing it into frequent and intimate contact with atmospheric air. This process—and several modifications thereof subsequently patented—had been tried in various places without success. Mr. Weldon, however, did succeed in obtaining a very satisfactory result, possibly—even probably—because not being a chemist, he did not add the equivalent quantity of lime to his liquor to precipitate the manganese, but used an excess. However, Mr. Weldon, if he was not a chemist at that time, was a man of genius and of great perseverance. He soon made himself a chemist, and having once got a satisfactory result, he studied every small detail of the reaction with the utmost tenacity until he had thoroughly established how this satisfactory result could be obtained on the largest scale with the greatest regularity and certainty.

He even went further, and added considerably to our theoretical knowledge of the character of manganese peroxide and similar peroxides by putting forward the view that these compounds possess the character of weak acids. He explained in this way the necessity for the presence of an excess of lime or other base if the oxidation of the precipitated protoxide of manganese by means of atmospheric air was to proceed at a sufficiently rapid rate. He pointed out that the product had to be considered as a manganite of calcium, a view which has since been thoroughly proved by the investigation of Goergen and others; and it is only fair to state that Weldon's process is not only a process for recovering the peroxide of manganese originally used, but that he introduced a new substance, viz.: manganite of calcium, to be continuously used over and over again in the manufacture of chlorine.

Mr. Weldon had the good fortune that his ideas were taken up with fervency by Colonel Gamble, of St, Helens, and that Colonel Gamble's manager, Mr. F. Bramwell, placed all his experience as a consummate technical chemist and engineer at Mr. Weldon's disposal, and assisted him in carrying his ideas into practice. The result was that a process which many able men had tried in vain to realize for thirty years became in the hands of Mr. Weldon and his coadjutors within a few years one of the greatest successes achieved in manufacturing chemistry.

The Weldon process commences by treating the residual liquor with ground chalk or limestone, thus neutralizing the free acid and precipitating any sulphuric acid and oxide of iron present. The clarified liquor is run into a tall cylindrical vessel, and milk of lime is added in sufficient quantity to precipitate all the manganese in the form of protoxide. An additional quantity of milk of lime, from one-fifth to one-third of the quantity previously used, is then introduced, and air passed through the vessel by means of an air compressor. After a few hours all the manganese is converted into peroxide; the contents of the vessel are then run off, the mud, now everywhere known as "Weldon mud," is settled, and the clear liquor run to waste. The mud is then pumped into large closed stone stills, where it meets with muriatic acid, chlorine is given off, and the residual liquor treated as before.

HOW WELDON'S PROCESS WORKS.

You note that this process works without any manipulation, merely by the circulation of liquids and thick magmas which are moved by pumping machinery. As compared to older processes it also has the great advantage that it requires very little time for completing the cycle of operations, so that large quantities of chlorine can be produced by a very simple and inexpensive plant. These advantages secured for this process the quite unprecedented success that within a few years it was adopted, with a few isolated exceptions, by every large manufacturer of chlorine in the world: yet it possessed a distinct drawback, viz.: that it produced considerably less chlorine from a given quantity of muriatic acid than either native manganese of good quality of Mr. Dunlop's recovered manganese. At that time, however, muriatic acid was produced as a bye-product of the Le Blanc process so largely in excess of what could be utilized that it was generally looked upon as a waste product of no value. Mr. Weldon himself was one of the very few who foresaw that this state of things could not always continue. The ammonia soda process was casting its shadow before it. Patented in 1838 by Messrs. Dyar and Hemming it was only after the lapse of thirty years (during which a number of manufacturing chemists of the highest standing had in vain endeavored to carry into practice) that this process was raised to the rank of a manufacturing process through the indomitable perseverance of Mr. Ernest Solvay, of Brussels, and his clear perception of its practical and theoretical intricacies. A few years later, in 1872, Mr. Weldon already gave his attention to the problem of obtaining the chlorine of the salt used in this process in the form of muriatic acid. He proposed to recover the ammonia from the ammonium chloride obtained in this manufacture by magnesia instead of lime, thus obtaining magnesium chloride instead of calcium chloride, and to produce muriatic acid from this magnesium chloride by a process patented by Clemm in 1863, viz.: by evaporating the solution, heating the residue in the presence of steam, and condensing the acid vapors given off.

Strange to say, this same method had been patented by Mr. Ernest Solvay within twenty-four hours before Mr. Weldon lodged his specification. It has been frequently tried with many modifications, but has never been found practicable. Soon afterwards Mr. Weldon, with the object of reducing the muriatic acid required by his first process, proposed to replace the lime in this process by magnesia, and so to produce a manganite of magnesia. After treating this with muriatic acid, and liberating chlorine, he proceeded to evaporate the residual liquors to dryness, during which operation all the chlorine they contain would be disengaged as hydrochloric acid and collected in condensers, while the dry residue, after being heated to dull redness in the presence of air, would be reconverted into manganite of magnesia.

This process was made the subject of long and extensive experiments at the works of Messrs. Gamble, at St. Helens, but did not realize Mr. Weldon's expectations. It, however, led to some further interesting developments, to which I shall refer later on.

DEACON'S PROCESS WITHOUT MANGANESE.

Those of you who were present at the last meeting of the British Association in this city will remember that this section had the advantage of listening to a paper by Mr. Weldon on his chlorine process, and also to another highly interesting paper by Mr. Henry Deacon, of Widnes, "on a new chlorine process without manganese." And those of you who came with the then President of the

Section (Prof. Roscoe), to Widnes to visit the works of Messrs. Gaskell, Deacon & Co., will well remember that at these works they saw, side by side, Weldon's process and Deacon's process in operation, and no one present will have forgotten the thoughtful, flashing eyes and impressive face of Mr. Deacon when he explained to his visitors the theoretical views he had formed as regards his process.

Mr. Deacon had made a careful study of thermo-chemistry, which had been greatly developed during the predeeding decade by the painstaking, accurate and comprehensive experiments of Julius Thomsen and Berthelot, and had led the latter to generalizations, which, although not fully accepted by scientific men, have been of immense service to manufacturing chemistry.

Mr. Deacon came to the conclusion that if a mixture of hydrochloric acid with atmospheric air was heated in the presence of a suitable substance capable of initiating the interaction of these two gases by its affinity to both, it would to a very great extent be converted into chlorine with the simultaneous formation of steam, because the formation of steam from oxygen and hydrogen gives rise to the evolution of a considerably larger quantity of heat than the combination of hydrogen and chlorine. Mr. Deacon found that the salts of copper were a very suitable substance for this purpose and took out a patent for this process in 1868. He entrusted the study of theoretical and practical problems connected with this process to Dr. Ferdinand Hurter who carried them out in a manner which will always remain memorable and will never be surpassed, as an example of the application of scientific methods to manufacturing problems and which soon placed this beautiful and simple process on a sound basis as a manufacturing operation.

In the ordinary course of manufacture, the major part—about two-thirds—of the hydrochloric acid is obtained mixed with air and a certain amount of steam, but otherwise very little contaminated. Instead of condensing the muriatic acid from this mixture of gases by bringing it into contact with water, Mr. Deacon passed it through a long series of cooling pipes to condense the steam which of course absorbed hydrochloric acid and formed a certain quantity of strong muriatic acid. The mixture of gases was then passed through an iron superheater to raise it to the required temperature and thence through a mass of broken bricks impregnated with sulphate or chloride of copper contained in a chamber or cylinder called a decomposer, which was protected from loss of heat by being placed in a brick furnace kept sufficiently hot. In this apparatus from 50 to 60 per cent. of the hydrochloric acid in the mixture of gases was burnt to steam and chlorine. In order to separate this chlorine from the steam and the remaining hydrochloric acid the gases were washed with water and subsequently with sulphuric acid. The mixture now consisted of nitrogen and oxygen, containing about 10 per cent. of chlorine gas, which could be utilized without any difficulty in the manufacture of bleach liquors and chlorate of potash, and which Mr. Deacon also succeeded in using for the manufacture of bleaching powder, by bringing it into contact in specially constructed chambers with large surfaces of hydrate of lime. Within recent years this latter object has been attained in a more expeditious and perfect manner by continous mechanical apparatus (of which those constructed by Mr. Robert Hasenclever and Dr. Carl Langer, have been the most successful), in which the hydrate of lime is transported in a continuous stream by single or double conveyors in an opposite direction to the current of dilute chlorine and the bleaching powder formed delivered direct into casks.

ADVANTAGES OF THE DEACON PROCESS.

Mr. Deacon's beautiful and scientific process thus involves still more movement of materials than the very simple process of Mr. Weldon, because in lieu of large volumes of liquids he only moves a current of gas through his apparatus, which requires a minimum of energy. The only raw material used for converting hydrochloric acid into chlorine is atmospheric air, the cheapest of all at our command. The hydrochloric acid which has not been converted into chlorine by the process is all obtained, dissolved in water, as muriatic acid, and is not lost, as in previous processes, but is still available to be converted into chlorine by other methods, or to be used for other purposes.

In spite of these distinct advantages, this process took a long time before it became adopted as widely as it undoubtedly deserved. This was mainly due to the fact that the economy in the use of muriatic acid which it effected was at the time when the process was brought out, and for many years afterwards, no object to the majority of chlorine manufacturers, who were still producing more of this commodity than they could use. Moreover, there were other reasons. The plant required for this process, although so simple in principle, is very bulky in proportion to the quantity of chlorine produced, and as I have pointed out, the process only succeeded in converting about one-third of the hydrochloric acid produced into chlorine, the remainder being obtained as muriatic acid, which had in most instances to be converted into chlorine by the Weldon process; so that the Deacon process did not constitute an entirely self-contained method for this manufacture. This defect, of small moment as long as muriatic acid was produced in excessive quantities, was only remedied by an invention of Mr. Robert Hasenclever a short number of years ago when by the rapid development of the ammonia soda process the previous existing state of things had been completely changed, and when, at least on the Continent, muriatic acid was no longer an abundant and valueless bye-product, but on the contrary, the alkali produced by the Le Blanc process had become a bye-product of the manufacture of chlorine. Mr. Hasenclever, in order to make the whole of the muriatic acid he produces available for conversion into chlorine by the Deacon process, introduces the liquid muriatic acid in a continuous stream into hot sulphuric acid contained in a series of stone vessels, through which he passes a current of air. He thus obtains a mixture of hydrochloric acid and air, well adapted for the Deacon process, the water of the muriatic acid remaining with the sulphuric acid, from which it is subsequently eliminated by evaporation. In this way the chlorine in the hydrochloric acid can be almost entirely obtained in its free state by the simplest imaginable means, and with the intervention of no other chemical agent than atmospheric air. Since their introduction the Deacon process has supplanted the Welden process in nearly all the largest chlorine works in France and Germany, and is now also making very rapid progress in this country.

THE WELDON-PECHINEY PROCESS.

Mr. Weldon, when he decided to give up his manganite of magnesia process, by no means relaxed his efforts to work out a chlorine process which should utilize the whole of the muriatic acid. While working with manganite of magnesia he found that magnesia alone would answer the purpose without the presence of the peroxide of manganese. He obtained the assistance of M. Pechiney, of Salindres, and in conjunction with him worked out what has become known as the "Weldon-Pechiney" process, which was first patented in 1884.

This process consists in neutralizing muriatic acid by magnesia, concentrating the solution to a point at which it does not yet give off any hydrochloric acid, and then mixing it into a fresh quantity of magnesia so as to obtain a solid oxychloride of magnesium. This is broken up into small pieces, which are heated up rapidly to a high temperature without contact with the heating medium, while a current of air is passing through them. The oxychloride of magnesium containing a large quantity of water, this treatment yields a mixture of chlorine and hydrochloric acid with air and steam, the same as the Deacon process, and this is treated in a very similar way to eliminate the steam and the acid from the chlorine. The acid condensed is, of course, treated with a fresh quantity of magnesia, so that the whole of the chlorine which it contains is gradually obtained in the free state.

The rapid heating to a high temperature of the oxychloride of magnesium without contact with the heating medium was an extremely difficult practical problem, which has been solved by M. Pechiney and his able assistant, M. Boulouvard, in a very ingenious and entirely novel way.

They lined a large wrought-iron box with fire bricks, and built inside of this vertical fire brick walls with small empty spaces between them, thus forming a number of very narrow chambers, so arranged that they could all be filled from the top of the box, and emptied from the bottom. These chambers they heated to a very high temperature by passing a gas flame through them, thus storing up in the brick walls enough heat to carry out and complete the decomposition of the magnesium oxychloride, with which the chamber was filled when hot enough.

Mr. Weldon himself called this apparatus a "baker's oven," in which trade certainly the same principle had been employed from time immemorable; but to my knowledge it had never before been used in any chemical industry. This process has been at work at M. Pechiney's large alkali works at Salindres and is now at work in this country at the chlorate of potash works of Messrs. Allbright & Wilson, at Oldbury, a manufacture for which it offers special advantages. Mr. Weldon and M. Pechiney had expected that this process would become specially useful in connection with the ammonia soda process by preparing in the way proposed by Mr. Solvay and Mr. Weldon in 1872, a solution of magnesium chloride as a by-product of this manufacture, but instead of obtaining muriatic acid from this solution by Clemm's process to treat it by the new process, so as to obtain the bulk of the chlorine at once in the free state. But M. Pechiney did no more succeed than his predecessors in recovering the ammonia by means of magnesia in a satisfactory way.

Quite recently, however, it has been applied to obtain chlorine in connection with the ammonia soda process by Dr. Pick, of Czakowa, in Austria. He recovers the ammonia, as usual, by means of lime, and converts the solution of chloride of calcium, obtained by a process patented by Mr. Weldon in 1869, viz.; by treatment with magnesia and carbonic acid under pressure, into chloride of magnesium with the formation of carbonate of lime. The magnesium chloride solution is then concentrated and treated by the Weldon-Pechiney process.

CHLORINE IN THE AMMONIA SODA PROCESS.

I have repeatedly referred during this brief history to the great change which has been brought about in the position of chlorine manufacture by the development of the ammonia soda process, and have pointed out that the muriatic acid which for a long time was the bye-product of the Le Blanc process, without value, thereby became gradually its main and most valuable product, while the alkali became its bye-product.

I have told you now, very early in the history of this process, Mr. Solvay and Mr. Weldon proposed means to provide for this contingency, and how Mr. Weldon continued to improve these means until the time of his death. Mr. Solvay, on his part, also followed up the subject with that tenacity and sincerity of purpose which distinguishes him; his endeavors being mainly directed to producing chlorine direct from the chloride of calcium running away from his works by mixing it with clay and passing air through the mixture at very high temperatures, thus producing chlorine and a silicate of calcium, which could be utilized in cement-making. The very high temperatures required prevented, however, this process from becoming a practical success.

I have already told you what a complicated series of operations Dr. Pick has lately resorted to in order to obtain the chlorine from this chloride of calcium. Yet the problem of obtaining chlorine as a bye-product of the ammonia soda process presents itself as a very simple one.

This process produces a precipitate of bicarbonate of soda and a solution of chloride of ammonium by treating natural brine, or an artificially-made solution of salt, in which a certain amount of ammonia has been dissolved, with carbonic acid. In their original patent of 1838, Messrs. Dyar and Hemming proposed to evaporate this solution of ammonium chloride, and to distil the resulting dry product with lime to recover the ammonia. Now, all that seemed to be necessary to obtain the chlorine from this ammonium chloride was to substitute another oxide for lime in the distillation process, which would liberate the ammonia and form a chloride which, on treatment with atmospheric air, would give off its chlorine and reproduce the original oxide. The whole of the reactions for producing carbonate of soda and bleaching powder from salt would thus be reduced to their simplest possible form; the solution of salt, as we obtain it in the form of brine direct from the soil, would be treated with ammonia and carbonic acid to produce bicarbonate, and subsequently monocarbonate of soda; the limestone used for producing the carbonic acid would yield the lime required for absorbing the chlorine, and produce bleaching powder instead of being run into the rivers in combination with chlorine in the useless form of chloride of calcium; and both the ammonia (used as an intermediary in the production of soda) and the metallic oxide (used as an intermediary in the production of chlorine), would be continously recovered.

The realization of this fascinating problem has occupied me for a great many years. In the laboratory I obtained soon almost theoretical results. A very large number of oxides and even of salts of weak acids were found to decompose ammonium chloride in the desired way; but the best results (as was to be clearly anticipated from thermo-chemical data) were given by oxide of nickel.

(*To be continued.*)

THE Alumni Journal

Published Monthly under the auspices of the
Alumni Association of the College of Pharmacy
OF THE CITY OF NEW YORK,
115-119 WEST 68th STREET.

Vol. III. DECEMBER, 1896. No. 12

SUBSCRIPTION:

Per Annum,	**One Dollar**
Single Copies,	**15 Cents.**

All communications relating to subscriptions for the Journal, should be addressed to Nelson S. Kirk, 9 East 59th Street, New York City.

All communications intended for the Editor, original contributions, exchanges, books for review, etc., should be addressed to

A. Henning,
68 William Street,
New York City.

All communications relating to advertisements or to the business of the Journal, should be addressed to

Thomas M. Davies,
543 Third Avenue,
New York City.

All copy for publication, (written on one side of the paper only), or changes of advertisements should reach us on or before the 20th of the month previous to the issue in which they are to appear.

EDITOR.
A. HENNING. Ph. G.,
CONTRIBUTORS:
Alumni Association,
WM. HOBURG, JR., PH. G., 115 West 68th St., New York.
Alumni Notes, Socials, etc., and Classes prior to '93
GEO. F. BURGER, PH. G., 115 West 68th St., New York.
Bibliography,
ADOLPH HENNING, PH. G., 68 William St., New York.
Class of '93,
EUGENE F. LOHR, PH. G., 375 Third Ave., New York.
Class of '94,
NELSON S. KIRK, PH. G., 9 East 59th St., New York.
Class of '95,
B. DAUSCHA, PH. G., 234 E. 87th St., New York.
Class of '96,
J. HOSTMAN, 204 Bowers St., Jersey City, N J.
Class of '97,
Q. E. D.
Legal Notes,
H. A. HEROLD, 34 Pine St., New York.

The Editor is not responsible for the views expressed by the authors of papers, etc.

EDITORIAL.

IT is with a great deal of pleasure that we make mention in this column of the interest shown in the first social, held on evening of Wednesday, Nov. 18, 1896.

There is no better way of promoting sociability amongst the students and amongst the members of the Alumni Association than by bringing them together on stated occasions for a good time, furthermore, it shows the interest the officers of our college have taken in providing a place for such pleasant gatherings.

While the attendance was as large as any held last winter, it is to be hoped that the members of the present classes will take advantage of future socials as a means of spending a pleasant evening with us.

THE College of Pharmacy of the City of New York had an able representative in Dr. H. H. Rusby at the Pan American Medical Congress, lately held in the City of Mexico. The selection of Dr. Rusby as one of the two representing the pharmaceutical profession of the United States is certainly a recognition of the high standing of our faculty.

THE acting editor takes this opportunity of thanking the various class reporters and other members for their hearty co-operation.

MR. GEORGE W. HOPPING on Dec. 9, will deliver a lecture in the College Lecture Hall on "Business Hints for Pharmacists." Mr. Hopping's long business experience, the study he has made of the best counting house methods, coupled with his experience as a writer and speaker on financial topics, eminently fit him to impart some valuable information to our pharmaceutical friends. The lecture will embrace fully and concisely everything that its title, "*Business Hints to Pharmacists*" implies.

The vast interest taken in this course of lectures in the past and the flattering attendance upon them is evidence of their popularity and value.

No pharmacist in New York, Brooklyn, or the neighboring Jersey towns, can afford to miss Mr. Hopping's lecture, and to all these, as well as their friends, a most cordial invitation is extended.

NEW FOREIGN LITERATURE.

Fauna und Flora des Golfes von Neapel und der angrenzenden Meeres-Abschnitte. Herausgegeben von der zoologischen Station zu Neapel. XXIII. Monographie : Jatta, I cefalopodi del golfo di Napoli (Sistematica). *Berlin*, 1895. *R. Friedländer & Sohn*, 4°. XI, 264 pp. *Mit* 64 *Zinkotyp. im Text u. 1 Atlas.*

Clowes, F., and J. B. Coleman. Elementary quantitive chemical analysis. *London*, 1896. 8°. 254 pp.

Dixon, H. N. The Students Handbook of British Mosses. *London*, 1896. 8°. *With Illustr.*

Martin, E., L'Opium, ses abus. Mangeurs et fumeurs d'opium, morphinomanes. *Paris*, 1896. 8°. 183 pp.

Hospitalier, E. Il carburo di calcio e l'acetilene o gaz elettrico, con note e citazioni del traduttore. *Milano*, 1896. 16°. 127 pp.

Billings, J. S., S. W. Mitchell and D. H. Bergey. The Composition of expired Air and its Effects upon Life. *London*, 1895. 8°. 84 pp.

Engler, A., und K. Prantl. Die natürlichen Pflanzenfamilien nebst ihren Gattungen und wichtigeren Arten, insbesondere den Nutzpflanzen, unter Mitwirkung zahlreicher hervorragender Fachgelehrten begründet von *E.* und *P.*, fortgesetzt von *E.* III. Tl. 4. n. 5. Abtlg. *Leipzig*, 1896. *W. Engelmann.* 8°.

Green, J. R. A Manual of Botany. Vol. II. *London*, 1896. 8°. 554 pp. S. 1895 Nr. 2536.

Léger, E. Les Alcaloïdes des Quinquinas. *Paris*, 1896. 8°. 280 pp.

v. Martius, C. F. Ph., A. W. Eichler et Ign. Urban. Flora brasiliensis. Enumeratio plantarum in Brasilia hactenus detectarum. Fasc. 118 u. 119. *Monachii*, 1896. Fol. 248 pp. *Mit.* 28 *Taf.* und 178 Sp. *Mit* 24 *lith. Taf.*

Ascherson, P. Synopsis der mitteleuropäischen Flora. I Bd. 1. Lfg. *Leipzig*, 1896. *W. Engelmann.* 8°. p. 1-80.

Soll in 3 Bdn., à 12 Lfgn., erscheinen.

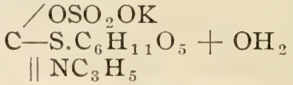
Trillat, A. La Formaldèhyde et ses applications pour la dèsinfection des locaux contaminès. *Paris*, 1896. 8°. VIII, 127 pp.

Bibliotheca botanica. Original-Abhandlungen aus dem Gesammtgebiete der Botanik. Herausgegeben von *Chr. Luerssen* und *B. Frank.* 37 Heft. Die Milchsafthaare der Cichoriaceen. Eine anatomisch-physiologische Studie von *Rch. Zander. Stuttgart*, 1896. *E. Nägele.* 4°. 44 pp. *Mit* 2 *Taf.*

Eder, J. M., und E. Valenta. Versuche über Photographie mittelst der Röntgen'schen Strahlen. Herausgegeben mit Genehmigung des k. k. Ministeriums für Cultus und Unterricht von der k. k. Lehr-und Versuchs-Anstalt für Photographie-und Reproductions-Verfahren in Wien. *Halle*, 1896. *W. Knapp.* Fol. 15 *Taf.* Mit 16 pp. Text.

Dommer, F. L'Incandescence par le gaz et le pétrole. L'acètylène et ses applications. *Paris*, 1796. 16°. *Ill.*

GLUCOSIDES OF BLACK AND WHITE MUSTARD.—Dr. Gadamer, of Marburg, has investigated the glucosides present in *sinapis alba* and *brassica nigra.* He found (1) sinigrin (potassium myronate).



$$\begin{array}{l} \;\;/\,OSO_2OK \\ C—S.C_6H_{11}O_5 + OH_2 \\ \;\;\|\,NC_3H_5 \end{array}$$

in black mustard only. After removing the water of crystalization by drying at 100°, the melting point is 126-7°. Its decomposition products differ according to the reagents used. With the enzyme myrosin, also contained in mustard, it splits into "mustard oil" (allyl isothiocyanate), potassium bi-sulphate and grape sugar; sulphur, carbon-disulphide and allyl cyanide are also formed. Other reactions with silver nitrate and barium hydroxide are described. (2) Sinalbin is only found in white mustard. It has the formula $C_{30}H_{42}N_2S_2O_{15}+5H_2O$. It is easily soluble in water, difficultly in alcohol. In presence of myrosin it forms a mustard oil, which is *not* allyl isothiocyanate. (3) Sinapin is regarded as sinapic acidcholine ester, and hitherto has been obtained only as the bisulphate $C_{16}H_{24}NO_5HSO_4+2H_2O$, in which form it is also found in black mustard. Sinapin is easily changed by free alkali, a strong yellow coloring matter being formed. It can be used as an indicator in alkalimetry. Sinapic acid $C_{11}H_{12}O_5$ is, according to Gladamer, dimethylæsculetinic acid, and forms yellow white crystalline needles m.p. 191-2.—*Naturforscher-versammlung.—Phar. Jour.*

Miscellaneous.

PYRETHRIN.

In previous investigations of the root of *Anacyclus pyrethrum* (see Bucheim, *Phar. Journ.* [3], vii., 315, and Thompson, *Pharm. Journ.* [3], xvii, 567, the products obtained were little more than purified extracts, but Schneegans has recently succeeded in preparing pyrethrin in a state of purity. He describes it as colorless, crystalizing in needles which melt at 46° C. Pyrethrin has a very hot taste, is soluble in absolute alcohol, acetone, ether, benzine, acetic acid, chloroform or carbon bisulphide. It is dissolved by concentrated sulphuric acid with yellow coloration, soon changing into red. For the preparation of pyrethrin a dry alcoholic extract of the root was digested with absolute alcohol, the solution purified by adding lead acetate, and evaporated to syrupy consistence, mixed with some lime and sand, and then dried. By treating this mixture with petroleum spirit a pale yellow solution was obtained, which left on evaporation a syrupy residue that became crystalline after exposure for some time over sulphuric acid.—*Chem. Zeit.* xx., 846.

BRYONIN.

A glucoside from *Radix bryoniæ albæ*, described as a very bitter powder, soluble in water with ease, decomposed in moist air; according to Schaller has marked purgative and diuretic properties. The dose is .001 gram., given in granules every two hours until the desired effect is obtained.

CHLOROFORM.

A new method of preparation consists in acting upon tetrachlormethane (CCl_4) with zinc and hydrochloric acid. Chlorine is replaced by hydrogen, according to the equation—

$$CCl_4 + 2H = CHCl_3 + HCl$$

The hydrochloric acid thus formed acts upon the zinc with liberation of hydrogen, by which a further quantity of tetrachloride is reduced to chloroform. When there is no further formation of hydrochloric acid, the liquid is allowed to cool and the layer of chloroform separated from the solution of zinc chloride.—*Pharm. Centralh.*, xxxvii., 715.

BISMUTH OXY-IODIDE.

This compound has been obtained by T. R. Blyth, as a result of distilling the double iodide of methylamine and Bismuth ($(CH_3 NH_2 HI)_3 (BiI_3)_2$), with caustic soda, in order to obtain the methylamine. The new body; $Bi_{17} I_3 O_{24}$, is described as a light crystalline powder, having a slight brown tint, unaffected by boiling water or alkalies, but soluble in dilute hydrochloric acid. Nitric acid decomposes it, with liberation of iodine, while sulphurated hydrogen decomposes it into sulphide. The oxy-iodide can also be prepared by boiling bismuth sub-iodide, BiOI with caustic soda.—*Chemical News*, lxxiv., 200.

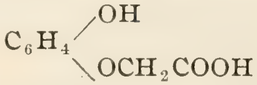
PREPARATION OF TITANIUM.

Working with the electric furnace, H. Moissan has found that titanic acid, in the presence of carbon, can be converted into crystallized titanium oxide with a current of 50 ampères and 50 volts, while with 350 amphères and 70 volts the bronze-yellow titanium nitride, Ti_2N_2, is obtained. Increasing the current to 1,200 ampères and 70 volts the nitride is decomposed, crystallized titanium carbide, TiC, being formed free from nitrogen. Metallic titanium containing only 2 per cent. of carbon is obtained by heating the carbide with excess of titanic acid. It is the most refractory substance yet obtained by means of the electric furnace, being more infusible than vanadium. In other papers the investigator deals with the preparation of molybdenum, uranium, manganese and iron and carbon borides, by the aid of the electric furnace. He claims to be the discoverer of crystallized calcium carbide, but gives Wilson credit for having introduced its manufacture into the United States.—*Annales de Chimie et de Physique* [7], ix., 229.

INFUENCE OF OXYGEN ON YEAST.

In reference to a statement by Chudiakow that the fermentation of a sugar solution is retarded by passing air through the liquid, R. Rapp suggests that the observations upon which it was founded were misleading. His experiments show that oxygen is essential for the multiplication of yeast cells, that it does not influence fermentation, but that violent agitation of a fermenting liquid may sometimes stop fermentation.—*Berichte*, xxix., 1983.

GUAIACETIN (Procatechol monocarboxylic acid)



$$C_6H_4\begin{cases} OH \\ OCH_2COOH \end{cases}$$

is used by Strauss in cases of phthisis and similiar diseases in doses of .5 gram. (7 grn.), given several times daily. The preparation also immediotely stops diarrhœa. It is yet too early to pronounce definitely upon its therapeutic effects.

Acetylene as an Explosive.

The demand for acetylene in the liquid state will probably be influenced considerably by the recent explosion at Paris, and some results in a paper read by Professor Clowes at the British Association meeting at Liverpool, tend to emphasize the fact that considerable and unnecessary risk is bound to attach to the use of the illuminant in that form. He finds that acetylene gives a wider range of explosive proportions than hydrogen, carbon monoxide, ethylene or methane, and remarks that this is probably due to its endothermic nature, "which leads to the gas being able to generate heat by its own decomposition. Heat thus generated would undoubtedly aid in causing explosion, and would thus extend the limits of explosive mixtures." It was found that at least 3 per cent. of acetylene must be present in air before the mixture can be kindled by a flame and caused to burn throughout. As the proportion of acetylene is increased the explosive character is augmented, but when 22 per cent. is present carbon begins to separate during the burning, and the amount of this carbon increases until the explosive character of the mixture disappears, 82 per cent. of acetylene being then present in the air. Berthelot and Vieile (*Comptes rendus*) also report on their investigation of the explosive nature of acetylene. They point out that as an endothermic compound its decomposition sets free a quantity of heat equal to that evolved by combustion of an equal volume of hydrogen to water. In connection with the industrial application of acetylene the authors have studied the conditions under which acetylene explodes with a view to indicating the precautions to be observed in its use. They have extended their inquiry to the influence of pressure, concussion, and heating. Hence they conclude that in the use of acetylene the possible disadvantages do not equal its advantages as a lighting material, and cannot limit its application. Too sudden discharge of the compressed gas must be avoided and care must be taken to absorb heat evolved during compression and by internal reactions, so as to prevent any considerable rise of temperature.—*Pharm. Jour.*

Columbin.

Hilger describes this constituent of columba root as crystallizing in colorless needles, insoluble in hot or cold water, cold alcohol or ether, but readily soluble in boiling ether or alcohol. Columbin melts at 182° C., is neutral, anhydrous, and has a composition represented by the formula, $C_{21}H_{24}O_7$. By the action of hydrochloric acid or dilute alkalies, columbin is converted into a monobasic acid.—*Zeitsch österr, Apotheker.* v., 1896, No. 1.

Ergot Bases.

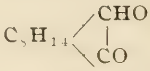
Keller describes a method of preparing the basis constituent of ergot, based upon the observation that it is extracted by simple treatment with ether, and is of opinion that ergot contains only one basic substance, the ergotinine of Tanret, the cornutine of Kobert, and the picrosklerotine of Dragendorff and Podwyssotski, being according to him identical or somewhat altered forms of the same substance. The sphacelotoxin or spasmotin of Jakoby is considered to owe its activity to the presence of some alkaloid. The production of an intense orange color by the reaction of the ergot alkaloid with ferrichloride is considered to be very characteristic.—*Schweiz, Wochensch, f. Chemie und Fharm.*, xxxiv., 65.

Ethylenediamine Creosol.

This compound was described by Dr. Baer at the Frankfurt Naturforscher meeting as being especially useful in the treatment of ulcerated wounds. It is a colorless liquid which has the property of penetrating the skin very readily, and it is said to be but slightly poisonous.

Oxycamphor.

A product of the oxidation of ordinary camphor, prepared by Dr. Manasse, of Munich, and recommended as useful for relieving difficulty of breathing. It is soluble in water and is stated to have the composition represented by the formula.



$$C_8H_{14}\left\langle\begin{matrix}CHOH\\ |\\ CO\end{matrix}\right.$$

—*Phar. Zeitung*, xli., 696.

Anusol.

Anusol is a preparation of the bismuth salt of iodo-resorcin-sulphonic acid, employed in the form of suppositories, for the treatment of piles. —*Phar. Journal.*

Alcohol in Digestion.

According to Drs. Chittenden and Mendel, alcohol taken in moderation at meal times does not retard proteid digestion, and may even facilitate it. In four out of nineteen experiments made with absolute alcohol, the digestive fluid being allowed to act upon various food substances under definite and constant conditions, the relative amount of digestive action was inincreased a fraction of 1 per cent., though in six cases there was a decrease in digestive action. The amount of alcohol present did not exceed one or two per cent., and if increased there was a decided decrease in digestive activity. Whisky, brandy, rum and gin give practically the same results, and the investigators draw the conclusion that "hence whisky can be considered to impede the solvent action of the gastric juice only when taken immoderately, and in intoxicating quantities" In so far as relates to the digestion of albumin, however, the report of the experiments is claimed by a medical critic to lend support to the idea that alcohol, in all the forms and doses in which it is commonly employed, is detrimental to the digestive process.—*Modern Medicine*, v., 196.

FALSE KOLA.

There has recently been sent into the London market from San Domingo, under the name of kola nuts, some large kidney-shaped seeds, about 2 to 2½ inches long, 1½ wide, and about ¾ to 1¼ inch thick, marked transversely with a deep narrow sinus. The seed consists of two cotyledons, apparently leguminous, and resembles closely the seeds of *Dimorphandra* (*Mora*) *excelsa*. They are said to be used in the island as food for cattle. It is reported that some tons of the seeds are at present in London. *Pharm. Journ.*

STRUCTURE OF ALPINE PLANTS.

Herr W. V. Lazniewski points out ('Flora,' 1896, p. 24') that it is impossible to lay down any general laws respecting the biological adaptations of alpine plants to their surroundings, since the conditions in which they grow vary so greatly; and this is true even of alpine species of the same genus, as in *Saxifraga*. The author distinguishes the following general types of alpine plants:—(1) Plants with leaf-rosettes, often forming dense cushions, such as many Cruciferæ and Caryophyllaceæ, species of *Primula*, *Androsace*, *Saxifraga*, etc.; (2) Plants whose leaves are rolled up at the margins, *e.g.*, *Erica carnea*, *Azalea procumbens*, *Empetrum nigrum*; (3) Plants with deposits of mucilage in the mesophyll or epiderm of leaves, which protect them against excessive transpiration; *Primula auricula*, *P. minima*, *Gentiana acaulis*, *G. imbricata*, etc.: (4) Plants with a more or less dense covering of hairs, *e.g.*, *Potentilla nitida*, *Leontopodium*, *Alpinum* many species of *Gnaphalium*, *Artemisia*, *Achillea*, etc.; (5) Dwarf plants with woody prostrate stems applied closely to the ground, as *Azalea procumbens*, alpine species of *Salix*.

RAPID MEASURING PIPETTE.

E. L. Smith publishes an illustrated description of a devise for rapidly measuring and discharging a definite volume of liquid, which is claimed to possess advantages over a burette, as the necessity of repeatedly filling the tube is obviated, and there is but one mark to watch in making the measurement. A wide-mouthed bottle serves as the reservoir, and through the stopper of this passes a short tube to admit air and a siphon tube reaching to the bottom of the bottle. The short tube is expanded at its outer extremity and the funnel-shaped opening is plugged with cotton-wool to filter the air. The siphon is connected, by means of a rubber connection provided with a pinch-cock, to a short glass tube, which, in turn, passes through a stopper inserted into the mouth of an ordinary test-tube. Through a hole blown in the side of the test-tube is passed a small glass siphon, which is fastened in place by means of a piece of rubber tubing, which just slips over the bent tube. On opening the pinch-cock liquid from the reservoir enters the test-tube, and the shorter leg of the small siphon must be of such a length that 5 C.c. of liquid will be automatically discharged when the level of the liquid has reached a mark on a line with the top of the bend in the siphon tube.—*Journal of the American Chemical Society*, xviii., 905.

A NEW ANTITOXIN.—The *Deutsche Medizinische Wochenschrift*, of Oct. 19, published reports from Professor Behring and Privatdocent Knorr upon a new tetanus antitoxin, which they have discovered in the course of rerearches among the by-products of the higher coloring processes. The discoverers express the hope that by means of the new specific it will be possible materially to reduce the percentage of deaths arising from traumatic tetanus. The antitoxin can now be obtained either in the form of a solution for use as a remedy in cases of traumatic tetanus in men or horses, or as a dry preparation for prophylactic treatment.

THE DUTCH AUTHORITIES in Java have sanctioned the founding of a research laboratory in the Botanical Gardens at Buitenzorg at a cost of 24,000 marks (£1,000 sterling).—*Phar. Jour.*

Alumni Association.

REGULAR meeting of the Association held Wednesday, Nov. 11, 1896, in the Alumni Room.

Meeting called to order by Vice-President H. A. Herold at 9 15 p. m. There were present Messrs. Henning, '76; C. S. Erb, '86; Dr. Diekman, '88; Siegman, Tannenbaum, Ihmels, Lohr, F. M. Stage and Hoberg, '93; Herold, L. G. B. Erb, Kirk, Stoerzer, Geisler and Kreuder, '94; H. B. Ferguson and R. Gies, '95, and Gregorius, Egger, Schnakenberg, Massman, Hostman, Uhe, Branner and Sackett, '96.

Minutes of the last Regular Meeting read and adopted as read on motion.

Motion made and carried that the Press Committee draw up a set of "Resolutions" to be presented to the wife of Mr. A. H. Mason, deceased.

Motion made and carried that a letter of condolence be sent by the Secretary to the family of Mr. Winfield Scott Johnson, recently deceased. Mr. Johnson was a member of the Executive Board of the Association.

Motion made and carried that a successor to Mr. Johnson be elected at once. The nomination of Mr. J. Hostman being made unanimous the Secretary was instructed to cast one affirmative ballot electing Mr. Hostman a Member of the Executive Board, to finish the unexpired term of the late Winfield Scott Johnson.

The minutes of the Special Executive Board Meeting, held on Nov. 9, were read by request, and adopted on motion.

Mr. Kirk then read the report of the Entertainment Committee as follows, viz: The scope of the Entertainment Committee's work, up to date, has consisted of one "Smoker," held on Oct. 28. Attendance was fair and a pleasant evening was spent.

The "Reading" schedule for Nov. 4, was declared off in deference to Mr. Mason's demise.

For the balance of the year we submit the following: Nov. 18, Reception; Nov. 25, Reading; Dec. 2, Banquet; Dec. 9, Lecture; Dec. 16; Reception; Dec. 30, Smoker. Signed, The Entertainment Committee, N. S. Kirk, Chairman.

Motion made and carried that the Report be accepted. Mr. C. S. Erb, Chairman of the Dinner Committee, reported as follows: Dinner to be held at Empire Hotel, on Dec. 2, 1896, tickets $1.75, and any person connected with the profession shall be entitled to attend, ladies excepted; no public speakers will be present.

Ball Committee reported progress.

The resignation of Mr. H. A. Herold as Chairman of the Ball Committee accepted.

Mr. C. S. Erb was elected Chairman of the Ball Committee in place of Mr. Herold.

Application of Membership received from Geo. E. Manville, Class of '95, residing at 45 West Seventy-first street, proposed by Dr. R. Gies and unanimonsly elected a Member of the Association.

There being no further business the motion to adjourn was promptly carried.

Fraternally,
WM. A. HOBURG, JR.,
Secretary.

Alumni Notes.

DEATH OF A YOUNG CHEMIST.

IN the death of Winfield Scott Johnson, who passed away in this city on September 14th, a young man well known and held in high esteem has been removed from the ranks. He was born in Oswego, N. Y., October 5, 1868. He came to New York in 1888 and shortly afterwards entered the employ of David Hays & Sons, 5th Ave. and 42d St. He was an earnest student of pharmacy and gained by studious nights between days full of toil a thorough knowledge of the art in all its branches. During his senior course at the New York College of Pharmacy he became assistant to Professor Chandler. He graduated in the class of '91, and joined the Alumni Association; in 1895 he was elected on the Executive Board. He retained his position as assistant to Professor Chandler and acted as assistant demonstrator of chemistry, physics and toxicology at the College of Physicians and Surgeons, besides being chemist to the Hygeia Water Works of this city. He had a beautiful home in Harlem and was to have married Miss Nora A. B. Forwood, the day of the Wedding ceremony being fixed for September 29th. Mr. Johnson was stricken with embolism of the brain and succumbed after a brief illness on Monday, September 14th.

ALL members of the Alumni Association desirous of organizing a Bowling Club, will please address R. Gies, 396 3d Avenue.

OUR SOCIAL CALENDAR.

THE inaugural smoker of this season's schedule occured Wednesday evening, October 28th. The contingent which were instrumental in enlivening the evening consisted of leading members of the Association, friends of same and the students of the College. The participants having drawn the first breath of life on American soil, were naturally possessed of that instinct which is but characteristic of American patriotism. Hence the chief topic indulged in was the national election. Though a heated discussion was held as to the relative merits of the Presidential candidates, nevertheless it terminated amiable as do all discussions in our circles. The McKinleyites championed their standard bearer by continually repeating a ditty, the words of which were:

Protection and Reciprocity,
Is the cry o'er land and sea;
Honest money is bound to win,
McKinley and American tin.

REFRAIN.

Tin, Tin, American Tin,
That's the stuff will make us win;
Grover goes out, McKinley goes in,
All on account of McKinley Tin.

The Bryanites, of which Nelson S. Kirk is chairman, tried to do likewise, but unfortunately the "College Yell" voices of the McKinleyites drowned their refrain, so as to make the words inaudible. Between the important discussion, music on our famed piano, was rendered by Dr. Kreuder and Mr. Kelley. These gentlemen, aided by their skill, attracted the attention of all present and received round after round of applause. When drug store closing time arrived, the Alumni room became deserted, the guests adjourning to a nearby cafè where the festivities were continued. Those present were: Nelson S. Kirk '94, Dr. Henry Kreuder '94, L. G. Erb, '94, Dr. Harry B. Ferguson, '95, D. J. O'Brien, '97, J. B. Kelley, '97, F. Preston, '97, F. B. Evans, '97, F. G. Wilbur, '97, J. G. Dodson, '97, John J. Horan, '98, Jos. Martin, '98, M. Englehard, '98, Mr. Maxey, '98 and others.

SOCIABLE.

THE first of this season's sociables was held in the library on Wednesday evening, November 18th. Although the library is not as spacious as is the assembly room, wherein last season's sociable were held, nor the ventilation as complete, yet the assemblage present unanimously voted the affair an enjoyable, as well as a social success. The ladies present with their prettiness and graceful ways were arrayed in beautiful and costly costumes which gave the library the appearance of a corner in fairyland. Professor Mandlebaum the talented and renowned pianist rendered the musical portion, of which several were of his own composition, being ably and artistically rendered; they were answered by the pretty gloved hands of the ladies. equally so by the pill-making hands of the gentlemen in round after round of applause. The genial Rudolph Gies, ably assisted by his charming wife, rendered vocal selections which as usual were answered with a demand for an encore. Father time recorded the hour of midnight ere the participants drifted to their respective homes. The parting verdict being—December sociable cannot present itself any too soon.

Among those present were:

E. F. Lohr, '93, J. Tannenbaum, '93, J. S. Stage, '93, F. M. Stage, '93 N. S. Kirk, '94, W. A. Hoburg, '94, R. Gies, '95, Mr. Ferguson,'95, Mr. Manville, '95, R. Boenke, '95, J. Hostmann '96, G. Ruckert, '99, G. H. Carter, Mr. Mandelbaum, Mr. Marks, H. J. McKellar, Mr. Taplin, Mr. Orrine J. Coogan, Mr. Fraser and others.

Ladies—Mrs. Tannenbaum, Mrs. Billings, Mrs. Gies, Mrs. Bastick, Mrs. Fraser, Misses Ruckert, Misses Mansfield, Misses Meares, Miss Smith, Miss K. Tisch, Miss Colman, Miss Hurley, Miss Johnston, Miss N. Sowter, and last but not least, Mrs. Nelson S. Kirk.

NEWSY AND PERSONAL.

N. S. KIRK the popular representative of the Class of '94 appeared at the sociable minus his mustache, which altered his appearance considerable. The pretty capillary appendages which heretofore were exhibited beneath Mr. Kirk's nostrils were amputed by a skillful tonsorial artist. The critical operation was a necessity inasmuch as Mr. Kirk wagered his capillary growth against the election of the victorious candidate on November 3d.

RICHARD REILLEY, the young assistant of Dr. Coblentz has severed his connection with the College.

GEO. F. BURGER, Ph. G.,
115-119 West 68th Street.

'93 NOTES.

WE were represented at Dr. Gallant's interesting and instructive lecture by Messrs. Ihmels, Sasse, Seigman, F. M. Stage, Tannenbaum, Hoburg and Lohr. Had the Doctor used Sasse as the object on which to illustrate the exact position of a splint it would have been doubly edifying.

BERT SCHREINER, representative from Plainfield, N. J., is still in the ring, and takes the liveliest interest in all affairs of the College.

ORATOR LAWRENCE reports business booming in the two stores owned by his brother (R. G.'93), and himself. Some day may we see the name of Lawrence as familiar to the retail drug trade as that of Frazer and Hegeman. He extends an invitation to all his classmates to visit him, especially be they wheelman, as Flushing roads are the pride of all Flushingites, be they wheelmen or not.

SAGE remarks of one of our fraternity, "If men were serpents the woods would be full of female snake charmers." He always was a popular boy.

I RECEIVED the following characteristic note: "Will try to get to New York to see you all."

Yours Ph. G. ly,
F. R. PERRY.

A MEMBER of the class who had been seen wandering about in a preoccupied manner for several weeks was heard to remark: "I suppose she was right, for when matrimony brings a woman to the wash-tub she has the right to call in a labor union." I wonder what he meant.

SAID "Happy Harry" Heller with a thoughtful expression, "When a man meets his wife downtown he wonders how much it will cost him."

TANNY and his bunch of notes did not materialize this month, so you will have to worry along with my efforts. I did hope the column could be made brighter and newsier, but it seemed not.

RUMOR says Ricksecker has advanced to being a proprietor, but I have been unable to locate him thus far.

THE reception on the 18th was a very encouraging sign of this Winter's advancement over last year. Mr. Mandlebaum, the popular "tooth-brush peddler," furnished excellent music, which kept our feet a going to all hours of the morning. I am sure he has the thanks of the Association for his kindly offer of his his services. Hoburg, Tannenbaum, Uhle, the Stager and Lohr represented the class.

WORDS cannot express the sorrow I feel at the untimely taking off of our beloved editor, Mr. A. H. Mason. I have left the task to the last, thinking some words which would in a measure express the depth of my feeling would occur to me. But no written sentence can express our loss. He will live in our hearts as one who by his kindly advice and correction showed us our errors and made us better for having known him.

EUGENE F. LOHR.

WHEREAS, it has pleased Almighty God to remove from our midst, in the prime of his life, our beloved friend and associate, Alfred Henry Mason, and

WHEREAS, his untiring services having been invaluable to us in a literary, social and pharmaceutical capacity, be it

Resolved, that we, the members of the Alumni Association, of the College of Pharmacy of the City of New York, tender to his bereaved family our most sincere sympathy in this, the hour of their affliction, and furthermore, be it

Resolved, that a copy of these resolutions be spread upon the minutes of the Association.

NELSON S. KIRK
EUGENE F. LOHR } *Committee.*
JEANOTT HOSTMANN

'94 NOTES.

NOVEMBER 11, Roll of Honor: Herold, Kreuder, Geisler, Ely, Erb, Grube, Muller, Stoerzer and Kirk.

CLASS picture—eight, '94 men have contributed 25 cents each towards the buying of a '94 picture to be presented to the Alumni Association and hung in the Alumni room. We hope that several more will follow suit, so that the picture may be presented on December 11th.

CLARENCE W. ROSE will open a new store on the main thoroughfare of Bayshore, on January 1. This is about two miles from his brother's store in Islip, and is considered a good location. He has the best wishes of his many friends.

GEORGE C. FROEHLICH has left Mamaroneck on account of business affairs and is with his brother in South Africa. The store which he opened about a year ago is at present being conducted by his father-in-law, Mr. Perrin.

BANKS H. BOUTON, of New Rochelle, was married to Miss Edith Le Fevre on Oct. 29, the ceremony being performed at St. John's M. E. Church. Again our best wishes our extended.

FRANK L. WILCOX, of Asbury Park, was married to Miss Ruth Van Inwegan at the latter's home in Port Jervis on Oct. 1, Rev. W. W. Wilcox, a brother of the groom, officiating. It was a picturesque and novel wedding. The bride and groom stood under the archway of the large front doors of the house, the minister and bridal party being grouped about them on the porch, while the guests were seated or standing on the green lawns.

Franklin G. Hills was with Mr. Attwood all summer at West End, N. J. Now he is Apothecary of the Inebriates Home at Fort Hamilton.

Professor Coblentz is authority for the statement that Stoerzer has volunteered to procure ptomaines for the Post-Graduate Class. As this will necessitate the decomposition of several canines Schuyler is watching his back yard.

"**Look** out for Schuyler," he is a policeman now, in fact, the first colored one appointed. The Curators of the College made an application to the Police Commissioners for a special policeman a short time ago with the result of Schuyler being appointed. He is to have a uniform and will in the future command more respect among "the boys."

'94 congratulates '96 on their loyalty. "Keep it up Boys, and we'll have real nice social evenings this winter."

"**Was** the reception a success? Well, say, and how about another one on Dec. 16."

George Burger has made quite a success in the cultivation of a hirsute appendage.

William L. Clarke, of Riker's, has been quite sick, but is reported to be on the mend now.

N. S. K.

'95 NOTES.

Geo. E. Manville has joined the Alumni Association.

'96 NOTES.

Barthelemy G. Donzel is with Banks H. Bouton of New Rochelle.

Following news concerning C. M. Rawlins will no doubt interest members of our class. Cards are out announcing the marriage of Mr. Clifton M. Rawlins to Miss Henrietta B. Storrs. The marriage will take place at the home of the bride's parents in Painesville, O., Dec. 17, 1896. The couple will take a bridal trip to the principal Eastern cities.

Mr. Rawlins is a graduate of N. Y. C. P. and was formerly manager of the Morningside Pharmacy, 113th street corner 8th avenue, N. Y. He is at present chemist and superintendent to the Ripley Company, of New York City and Ripley, Ohio.

Miss Storrs is the second daughter of Mr. and Mrs. W. G. Storrs, of the Storrs & Hanalson Company, who have one of the most entensive nurseries in the world.

Following members were present at the very interesting lecture delivered by Dr. Gallant on "The First Aid to the Injured," Nov. 11. Massmann, Schnackenberg, Taplan, Gregorius, Branner, Uhe, Sackert and Eggers.

Rawlins isn't the only one; there are others. I received word from "Boss Kicker" Finlay, who is at present employed by Wm. H. Meek, 49 Camp street, Providence, R. I. He was quietly married to Miss Sophie S. Goodwin before he left New York for his home. Mrs. Finlay will no doubt be remembered by the boys who attended the ball at which she was present. I take great pleasure in tendering the good wishes of his classmates.

Edward Uhe, whom all the girls of Weehawken missed so much after his farewell, has accepted a position with Wimmer's, Gates and Sumner avenues, Brooklyn.

F. W. Hayward, better known as "Sloppy" by his classmates, has left Jennings, of Far Rockaway, and is spending a few weeks of well-earned leisure. He is splitting up his time between Hoboken and Hackettstown, two well-known New Jersey cities.

Sackert is managing his father's store in Tarrytown, N. Y. He came down to New York for a short stay and spent some of his time visiting some of the boys. Amongst others he paid a visit to the Far Rockaway delegation, consisting of Norcross, who is still with Keeler, Jennings, Jr., and Hayward, who were then with Sennings.

John G. Block, Jr., Ph.G., of Jersey City, N. J., who has become quite prominent as a guide of the Torrey Botanical Club, spent a few weeks botanizing on Long Island as a representative of the club. He returned with quite a collection of valuable and rare specimens. He also spent some time with the rod and gun, and on his return his neighbors had fish and game dinners for several days. (?)

It being the intention of each class to present the Alumni Association with a class picture to adorn the rooms of the latter, the following members have each contributed the sum of twenty-five cents: Gregorius, Massmann, Eggers, C. W. Smith, Uhle, Branner, Schnackenberg, Sackert. All those wishing to push a good thing along may send remittance to the reporter.

I **received** word from Chas. Wetmore Smith, our ex-reporter, who is still at Hunter up in the Catskill Mountains. He states that at the time of writing the ground up there was covered with snow. He seems to be well satisfied up there but says he will make it his business to be present at some of the Alumni affairs.

I HOPE to see a large delegation of '96 boys at the Alumni Dinner, which will be held at the "Empire Hotel" on the night of Dec. 2, 1896. If all those who have expressed their desire to be present will appear the banquet cannot fail to be the reunion it was meant for. Now boys, don't fail to be present to make merry, eat and drink, meet old friends, and talk over the happenings of our college days.

I HAVE been asked by Mr. Kirk to remind the members of our class that although the JOURNAL has been sent to everyone, he is still awaiting a reply from a number. An early and substantial response will be much appreciated by him.

PUT your shoulders to the wheel boys and don't forget to boom our Ball; work early and late, and it is bound to become a greater success than the first one.

ETHANE, Methane, Cochineal,
Argol, Menthol, Bromethyl,
Wahoo, Wahoo, Wahoo, Wix,
N. Y. C. P. '96.
Boomerang! Boomerang! Sis! Boom! Bah!

Don't forget to have this ready at the dinner.

JEANNOT HOSTMANN, PH. G.

Post-Graduate Notes.

THE class has now eleven members, Mr. H. Blackmore, '88, having entered Oct. 19.

THE boys are rapidly gaining knowledge.

THE class was suddenly awakened from its slumbers one morning by two loud explosions of a hydrogen apparatus. One of the students had been trying to ignite hydrogen combined with air; luckily there were no serious results.

So attentive was Eberhardt the other day, listening to the knowledge imparted by the "Wallflower," that he was minus a part of his sleeve before he discovered that he had been holding his arm in the flame of a gas burner; he saw his position in time to save himself from further destruction. A few days previous to this he had made the wonderful discovery that carbon disulphide was inflammable, "mirabile dictu!"

WOULD you advocate the use of H_2S water as a refreshing drink, Potter?

GERKEN now knows a red hot iron when he sees it.

ECKHARD has become familiarly known by the name of "solids."

BEAR'S "Byronian whiskers" are the envy of the class.

WE are on the eve of great discoveries—Euclid is wrong, a part is greater than the whole—Stoerzer's latest achievement is finding 323 per cent. of antimony in antimonous oxide; at this rate of progress he will have discovered the Alchemist's wand before Commencement, and gold will be the cheapest of all metals.

MADGE O'CONNOR, A .B.

N. Y. C. P. Cyclers.

A VERY pleasant run was held on November 1st, start being made from the College at 1.30 P. M. The intended route was to Tarrytown via Kingsbridge, Yonkers, Irvington, etc., but owing to the fatigued condition of the novices, the destination resulted in Yonkers, where a pleasant hour was whiled away in Room No. 7, of one of the Hotels. Here Dr. Hess and Stoerzer vied with one another in jokes which were extremely interesting. At 4.30 the return start was made, a comfortable pace being set by Capt. Erb, which landed the division in New York at 6.30 P. M.

ON November 15th, the division met at West 42d Street Ferry. The 2 P. M. boat was taken to Weehawken, Kirk leading to Hudson County Boulevard. From there to Guttenburg they were "all in a bunch." Upon arrival, two races and a "smash-up" were witnessed, after which the racing men of the N. Y. C. P. Cyclers lined up for a mile scratch. Erb led with a good start for the first quarter, when Kirk moved up and passing him led to the stretch; here Kreuder came through and won easily, Kirk second, and Erb third. Time, 3.10. Dr. Hess now led the division to Fort Lee, where a brief stay was made at Richter's ('94). "Back pedaling was then indulged in to the Ferry, the City being reached at 5.45, where the participants seeked their respective abodes.

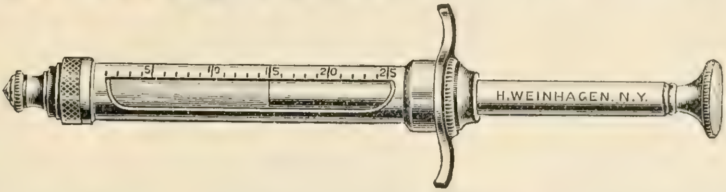
H. C. JORGENSON '98, has been elected Secretary-Treasurer in place of Otto Hensel resigned.

"SCORCHER."

...WEINHAGEN'S...

Retested Clinical Thermometers

WEINHAGEN'S SOLID PISTON ASEPTIC HYPODERMIC TABLET SYRINGE



No Leather or other Washers. Piston works smoothly **without** lubricant. This Syringe is easily cleaned and sterilized. We supply them in any of our cases. We also furnish them without cases.

Send for our Illustrated Circular of Hypodermic Syringes, etc.

ALL JOBBERS FURNISH OUR GOODS.

H. WEINHAGEN,

Established 1855.

22-24 North William St., New York, U. S. A.

VANILLIN

One Ounce Equal to Forty Ounces of Finest Vanilla Beans.

We will Mail Vanillin on receipt of $4 per ounce.

◆

The French & American Trading Co.

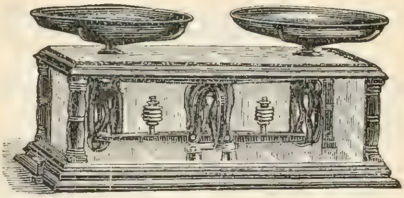
JOS. BERNARD, Manager,

No. 56 & 58 PINE STREET,

NEW YORK.

THE STANDARD OF PERFECTION!

Handsomest Counter Scales Made



Handsome Counter Scales, with any kind of Hard Wood Cases and Beveled Plate Glass. Sensitive to 2 grains. May be loaded with 25 lbs. without damage Pans 9 inches diameter.

◆

Torsion Balance

Only Scale made with all the latest patented improvements and without Agate or any other kind of knife edges to wear, corrode, become crushed or clogged with dirt, etc.

☞Write for Price List, also copy of THE FRANKLIN INSTITUTE'S reasons for awarding THE JOHN SCOTT LEGACY MEDAL and PREMIUM to THE TORSION BALANCE and why they are better than any knife edge scale that can be made. Prescription or Counter Scales from $9. up.

THE SPRINGER TORSION BALANCE CO.,

92 Reade Street, New York

WHITALL, TATUM & CO.,

MANUFACTURERS OF

Druggists', Chemists' and Perfumers'

GLASSWARE,

Manufacturers and Jobbers of

DRUGGISTS' SUNDRIES.

410-414 RACE ST.,	46 & 48 BARCLAY STREET,	41 & 43 BROAD ST
PHILADELPHIA	NEW YORK.	BOSTON.

Factories, MILLVILLE, N. J.

SYNOPSIS OF LECTURES

TO BE HELD UNDER THE AUSPICES OF THE

ALUMNI ASSOCIATION

OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

1896-97.

Lectures will be given on the Second Wednesday of each month at eight P. M.

Dec. 9, 1896.—Mr. GEO. W. HOPPING. "*Business Hints.*"

Jan. 13, 1897.—Prof. HENRY H. RUSBY. "*Delta of the Orinocco.*"

DODGE & OLCOTT,

Importers of DRUGS.
Distillers of ESSENTIAL OILS, ETC.
Curers of VANILLA BEANS.

86-88 WILLIAM STREET,
NEW YORK.

THE HASTINGS & McINTOSH TRUSS CO., Successors to **THE HASTINGS TRUSS CO.,**

Manufacturers of all kinds of
Indestructible Hard Rubber, Elastic and Leather-Covered
TRUSSES,
Abdominal and Uterine Supporters, Shoulder Braces, Crutches, Elastic Hosiery and Body Belts
For Home and Export Trade.
224 South Ninth Street, - - - PHILADELPHIA, PA., U. S. A.

VACCINE VIRUS

Pure and Reliable Animal Vaccine Lymph, Fresh Daily
Liberal discount to Druggists. Send for Illustrated Pamphlet.

10 Ivory Points $1.00 10 Quill slips (Half Quills) $1.00

Orders by Mail or Telegraph promptly dispatched

Wm. C. Cutler, M.D. J. F. FRISBIE, M. D.

NEW ENGLAND VACCINE CO., Chelsea Station,
BOSTON, MASS.

"IN MEDICINA QUALITAS PRIMA GRAVIS EST."

WM. R. WARNER & CO.'S

WARNER BUILDING
Wm R. WARNER & Co. Manufacturing PHARMACEUTISTS
SUGAR & GELATIN SOLUBLE-COATED EFFERVESC
ESTABLISHED 1856.
NO 1228

Sugar and Gelatin Coated **Pills,**

Compressed Tablets,
Fluid Extracts.

Quinine Pills, according to market price of quinine.
For 5 to 100 thousand lots, special quotations.
Warner's Veg. Liver Pills, $0.85 per 1,000.
Aromatic Cachous, $1.00 per ℔.
Compressed Chlor. Potash, $0.37 per ℔.
Cathartic Co., U. S. P., $1.00 per ℔.
Cathartic Co., Improved, 1.00 "
Cathartic Co., Active, 1.00 "

Warner's Little Cathartic Granules—

1,000	$0.85
10,000	8.00

Cathartic and Liver Pills—

1,000	$0.85
10,000	8.00

Supplied by Leading Druggists

Established 1848 | **Incorporated 1891.**

SPECIFY WHEN ORDERING OF YOUR JOBBERS

GORDON'S

CHEMICALLY PURE

GLYCERIN

The Standard Brand of the World.

Do you know that W. J. M. Gordon's is the Oldest Brand of GLYCERIN in the World.

Silver Medal awarded by the Ohio Mechanics' Institute, 1860. First Premiums awarded by Cincinnati Industrial Exposition, 1870, 1872, 1873, 1874 and 1879 for best Glycerin.

It costs no more than other makes, Quality unsurpassed. Is always reliable.

Medal of Honor and Diploma of Merit awarded by the U. S. Centennial Commission, Phila., 1876, for Purity in quality Elegance of appearance and High specific gravity of Glycerin.

Was Given the Highest Award, Medal and Diploma at the World's Columbian Exposition, Chicago, 1893, "For High Gravity and freedom from Impurities.

Highest Award Gold Medal and Diploma Awarded at the California Mid Winter International Exposition, for Absolute Purity, Elegance of Appearance and High Specific Gravity of Glycerin.

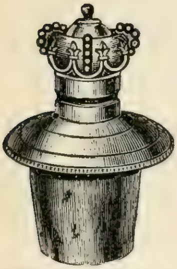
The W. J. M. Gordon Chemical Co.

Nos. 710, 712, 714, 716, 718 & 720 Plum St.,
Nos. 25, 27, 29, 31, 33, & 35 Branch St.,
CINCINNATI, OHIO.

RETAIL DRUGGISTS

who desire RELIABLE RUBBER GOODS at FAIR PRICES, will advance their interests by specifying in their orders to jobbers, the GOLD SEAL brand, made only by

THE GOODYEAR RUBBER COMPANY.



Triturate Plates,

Lozenge Cutters.

A. H. WIRZ,

913, 915, 917 Cherry St., PHILADELPHIA, PA.

Manufacturer of all kinds of ***Bottle Stoppers,***

Collapsible Tubes,

Pill Machines.

Hand Pill Compressors for any shape and size of Pills.
Suppository Moulds, all sizes and shapes, including the approved Wellcome shapes for Suppositories and Bougies.

Please order from your Wholesale Dealer.

"THE BEST OF AMERICAN."

PLANTEN'S CAPSULES

PLANTEN'S PERLOIDS

REGISTERED TRADE MARK.

KNOWN AS RELIABLE NEARLY 60 YEARS.

FILLED CAPSULES { *Soluble Hard, and Elastic Soft.*
"PERLOIDS," OR PEARLS AND GLOBULES.

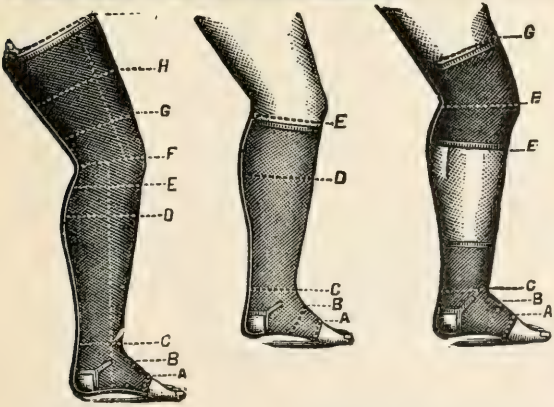
EMPTY CAPSULES OF ALL KINDS.

Encapsuling Private Formulas a Specialty.

Correspondence Solicited.
Send for Samples and Formula Lists.

H. PLANTEN & SON, Established 1836. **New York.**

The Pioneer American Capsule House.



The E. K. Hall M'f'g Co.,

**216 Fulton Street,
NEW YORK, N. Y.**

***Elastic Hose, Knee Caps,
Anklets,
Suspensory Bandages,
Abdominal Supporters, Etc.***

Directions for Measuring.—Indicate the exact measure around the LIMB in inches, opposite the dotted lines on the cut, lengths also should be given. Give exact measure of LIMB we allow for PRESSURE.

DR. J. FEHRS'

"Compound Talcum,"

"BABY POWDER."

"The Hygienic Dermal Powder" for Infants and Adults.

Originally investigated and its therapeutic properties discovered in the year 1868 by Dr. Fehr, and introduced to the Medical and the Pharmaceutical Professions in the year 1873.

COMPOSITION.—Silicate of Magnesia with Carbolic and Salicylic Acids.

PROPERTIES.—Antiseptic, Antizymotic and Disinfectant.

USEFUL AS A GENERAL SPRINKLING POWDER,

With positive Hygienic, Prophylactic and Therapeutic properties.

GOOD IN ALL AFFECTIONS OF THE SKIN.

SOLD BY THE DRUG TRADE GENERALLY.

Per Box,	*plain,*	*25c.;*	*Perfumed*	*50c*
Per Dozen	"	*$1.75;*	*Perfumed*	*$3 50*

THE MANUFACTURER.

JULIUS FEHR, M. D.,

Ancient Pharmacist, **HOBOKEN, N. J.**

Only advertised in Medical and Pharmaceutical prints.

THE

Alumni Journal Binder

is now being made—will be ready in about a month. Will conveniently preserve the Journal for one year, making an interesting volume.

YOU SHOULD HAVE ONE!

Volume I, II, III, each handsomely printed in gold, THE ALUMNI JOURNAL, volume and year.

Price 75 cents each or all three Binders for $2.00 postpaid.

Place your order stating volume wanted mmediately.

THOS. M. DAVIES,

BUSINESS MANAGER,

643 Third Avenue, NEW YORK.

The

Ideal Substitute for Iodoform.

must be equally effective, odorless and cheaper Nothing except SOZOIODOLE-POTASSIUM meets these requirements. SOZOIODOLE-POTASSIUM appears in white crystals and contains 52.8% of Iodine, 20% of Phenol and 7% of Sulphur. It is used with Chalk, Sugar of Milk, Boric Acid, Starch, Zinc Oxide, Vaselin or Lanolin. Put up in 1 ounce packages.

MERCK & CO.,

MERCK BUILDING,

University Place, **New York.**

College . of . Pharmacy

of the City of New York.

IMPORTANT CHANGES FOR THE SESSION OF

. . . 1897-1898. . .

The 68th Session commencing in the autumn of 1897 is to be signalized with a practical exhibition of the confidence which the Lecture Committee have in the possibilities of a two years' course of instruction, arranged and so extended as to furnish a well grounded education to persons who feel that two years is the full allotment of time which they can devote to study, and yet know that only partial success can attend the Pharmacist of to-day who has not acquired a thorough elementary education in all departments of study which relate to Pharmacy.

The Trustees announce that beginning with the session of 1897, instruction will commence at half-past nine o'clock in the morning and continue until half past five o'clock in the afternoon, alternate days for Junior and Senior classes, a short intermission being arranged for refreshment at the noon hour.

The schedule will be so arranged with didactic lectures, exercises in the prescription department, practical laboratory work, quiz and class instruction, as to furnish sufficient change to relieve it from monotony while the student will be continuously employed under the care of his Professor, Instructor or their assistants.

The General Lecture ticket will be one hundred dollars from and after this date (1897) for the course, and entitles the holder to attendance at lectures, obligatory laboratory courses, instruction in the prescription department and quiz classes.

There will be no other fee except for examination, and the usual deposit for laboratory breakage.

Juniors who enter for the session of 1896 and 1897 will be permitted to continue the course as seniors, on the payment of the same fee for which they entered the College in their Junior year, viz.: seventy-five dollars.

For further particulars address the

COLLEGE OF PHARMACY of the CITY OF NEW YORK,
115-119 West 68th Street, NEW YORK.

THE attention of students of pharmacy, etc., is called to the importance of taking every opportunity to gain that practical knowledge which enables them to judge for themselves, with scientific accuracy, the quality of the goods they are distributing.

The Physician and the Surgeon look for this responsibility being assumed by you, and no other line of goods calls more for this care than Medicated Surgical Dressings, Plasters, etc. Seabury & Johnson possess the experience and facilities to prepare such articles in a form not elsewhere equaled, and with a degree of uniformity and excellence attempted by no other manufacturer required in the most modern practice of antiseptic surgery, so that you may without question take Seabury's manufactures as the "Standard." To illustrate, take the percentage of Antiseptic present in Medicated Gauzes, Cottons, etc. The percentage should be based on weight of finished product, and should express the relation of the antiseptic to the fabric or other material which is medicated.

Graduates, Seniors and Juniors.

The importance of taking THE ALUMNI JOURNAL cannot be too strongly impressed upon the graduates and students of the college. All matters pertaining to the college and college graduates, that can possibly interest them will be given space in this Journal. It is the only medium by which they can keep in touch with their classmates after they have left the college and have branched into business on their own account. So subscribe now and renew each year. Take an interest in your Alma Mater. You now have, without exception, probably the finest College of Pharmacy in the world, and it will devolve upon you (as graduates and members) to keep it in the first position it now holds. Let the history of the class be synonymous with the history of the college.

Subscription $1.00 yearly in advance. Special Subscription Rate to College Students, 50c. a year

☞ SUBSCRIBE NOW. ☜

Address, NELSON S. KIRK, Ph.G., 9 East 59th Street.

and WM. A. HOBURG, Jr., College.

SUBSCRIBE AT ONCE.

6 EAST 59th STREET.

SUBSCRIPTION ORDER.

TO THE ALUMNI ASSOCIATION,
New York College of Pharmacy.

Please find enclosed $__________ for subscription to THE ALUMNI JOURNAL, to begin with the issue of________ 1896.

Name________________________________

Address______________________________

____

EIMER & AMEND,

Wholesale Druggists,

Importers of

DRUGS, CHEMICALS,

AND

Chemical Apparatus.

Everything necessary for a
Chemical and Pharmaceutical Laboratory
furnished.

205 to 211 THIRD AVENUE,

Corner 18th Street, NEW YORK.

Packer's Tar Soap

Is more than a pure, bland, luxuriant cleanser: it is antiseptic, emollient and curative. It fortifies the skin in health, soothes it in irritated conditions, and is a constant protection against contagion.

Physicians have been using and prescribing this soap for nearly a quarter century.

"It's a Luxury for Bath and Shampoo."

Medical Standard.

LINTINE

Is a new Absorbent, made to take the place of Cotton or Lint. It is really fine Absorbent Cotton felted into a cloth-like-sheet. . . It is very absorbent; handier to use, for any purpose, than Cotton or Lint; you get more surface at less cost. For wound dressing there is nothing better than LINTINE. Johnson & Johnson, N. Y.

Elliott's Qualitative Analysis.

Second Edition. First Edition Exhausted in One Year.

Adopted as Practical Text Book in Six Institutions.

A Course of Instruction in Qualitative Chemical Analysis

By A. H. ELLIOTT, Ph.D.

Director of Chemical Laboratory of College of Pharmacy of the City of New York.

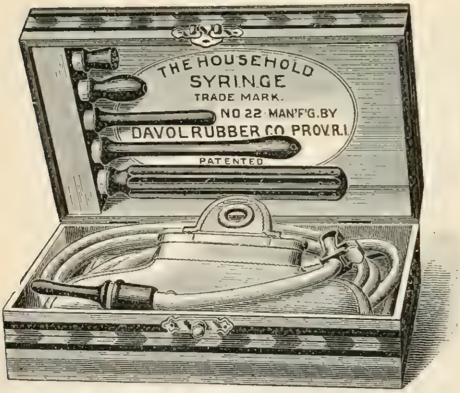
By Mail, prepaid, $1.50.

For Sale by G. A. FERGUSON,

College of Pharmacy of the City of New York,

115 West 68th Street, New York City.

ALWAYS THE BEST.



DAVOL'S HOUSEHOLD SYRINGES

Either Bulb or Fountain, are the best that can be made. Davol's Magic Atomizers, Continuous Spray, Metal or Hard Rubber Sprays, Cannot be Surpassed Fine Rubber Goods Generally for the Trade.

DAVOL RUBBER COMPANY,

Providence, R. I.

THE

Roessler & Hasslacher

CHEMICAL CO.,

Manufacturing and Importing Chemists.

R. & H. Chloroform U. S. P.

Manufactured from Acetone under U. S. Patent
No. 383,992.

G. & S. Sulphate of Quinine.

(Gold and Silver Brands).

QUININE SALTS, ACETANILID,
CHLORAL HYDRATE.

73 Pine Street, NEW YORK CITY

Works: Perth Amboy, N. J.

Druggists, SAVE MONEY!

MAKE YOUR OWN SODA WATER ETC. BY USING OUR

Compressed Carbonic Acid Gas (Liquid Carbonate)

NO GENERATOR NECESSARY

NO ACIDS. NO MARBLE DUST.

This Gas is ABSOLUTELY PURE being generated **without the use of chemicals whatsoever.** (A process entirely our own.) It is furnished in strong wrought iron cylinders which can be handled or shipped in any climate with ABSOLUTE SAFETY.

CHEAP. SIMPLE. SAFE. EFFECTIVE.

SEND FOR DESCRIPTIVE PAMPHLET AND LIST REFERENCES.

AMERICAN CARBONATE CO.,
424 to 434 EAST 19th ST., NEW YORK.

Gilpin, Langdon & Co.,

BALTIMORE, MD.

ORIGINATORS OF Assayed Powders
FOR Percolation.

A Long Stride Towards Perfected Pharmacy.

Our price list has over four hundred powders, and powders for percolation, embracing nearly all the drugs in general use. Prices are little or no higher than the commercial powdered drugs usually sold.

On orders amounting to $10.00 net we prepay freight east of the Mississippi River; west of that line, we allow one half total freight charges.

Send for price list, which contains a very valuable formulary and tables, making it an invaluable book of reference, in compact and practical arrangement.

DO YOU SELL

Toilet Papers

We make the largest line in

ROLLS AND SHEETS.

ALSO WHITE WRAPPING,
PURE JUTE MANILLA,
NEWS, SEIDLITZ, BLOTTING,
FLAT LINEN AND WRITING
AND RULED WRITING.

VERNON BROS. & CO.,
Paper Makers,
22, 24 & 26 READE ST., N. Y.

Send for Sample Book of what you want.

The Freytag Printing Co.
ALLIED PRINTING TRADES COUNCIL NEW YORK CITY
118-126 Walker St., N. Y.

Printers to
The Alumni Association

Druggists' Glassware,

SUNDRIES, FANCY GOODS, ETC.

Established 1849.

HAGERTY BROTHERS & CO.,

5, 8 and 10 Platt St., N. Y.

Factories: Pennsylvania, New Jersey, and Brooklyn, Long Island.

Manufacturers, Importers and Exporters of every variety of

Druggists', Perfumers', Confectioners' and Liquor Dealers'

Glassware, Porcelainware, Rubber Goods and Sundries.

Lettered Prescription Vials.

In this department of our manufactures we excel, as by our process the lettering is brought out CLEAR, BOLD and DISTINCT.

Glass Labeling.

In reference to the above we say that for beauty of design, brilliancy of color, and artistic finish of label, in connection with rapidity of execution of orders in this branch of our manufactures, we defy competition.

Druggists' Outfits and Supplies.

In this department we have an extensive assortment of goods to which we particularly call the attention of those who contemplate commencing business or who wish to replenish stock.

Our Superior Facilities

for obtaining a supply of goods from the best sources and on the most advantageous terms, being manufacturers and importers, are such as to enable us to offer great inducements to purchasers. We therefore solicit a call and examination of our extensive and well-selected stock, feeling confident of being able to give entire satisfaction.

Great Reduction in Prices.

Catalogues mailed on application. Correspondence solicited.

PANOPEPTON

BREAD AND BEEF PEPTONE

Presents all the constituents of the two great types of food in a perfectly soluble, diffusible and absorbable form.

In sickness, the indications and necessities for a comprehensive nutrient are no less plain than in health. The expedient of predigesting or peptonising this food is one of the most rational, scientific and important advancements of modern medicine.

Panopepton conserves and imparts energy, sustains the system, resists the inroads of disease, and quickly enables the digestive functions to resume their normal power, and thus appropriate ordinary foods.

FAIRCHILD BROS. & FOSTER,
NEW YORK.

ESTABLISHED 1835.

WEBB'S

ALCOHOL

AND

COLOGNE SPIRIT.

Our goods are the acknowledged Standard, and used by Druggists Chemists and Manufacturers throughout the World.

JAMES A. WEBB & SON,

SEND FOR QUOTATIONS. 165 PEARL STREET, NEW YORK.

New York Botanical Garden Library
3 5185 00259 7977